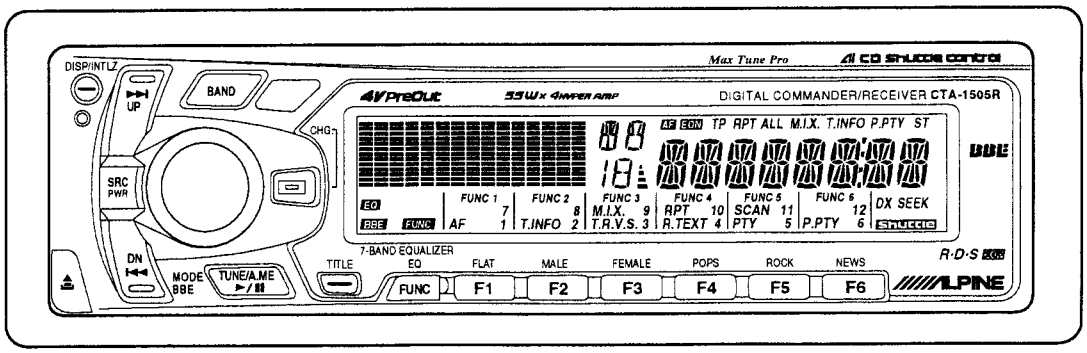
ALPINE®

SERVICE MANUAL

FM/MW/LW/RDS Digital Commander/Receiver

CD Shuttle Control



(CTA-1505R)

CTA-1505R/ CTA-1502R

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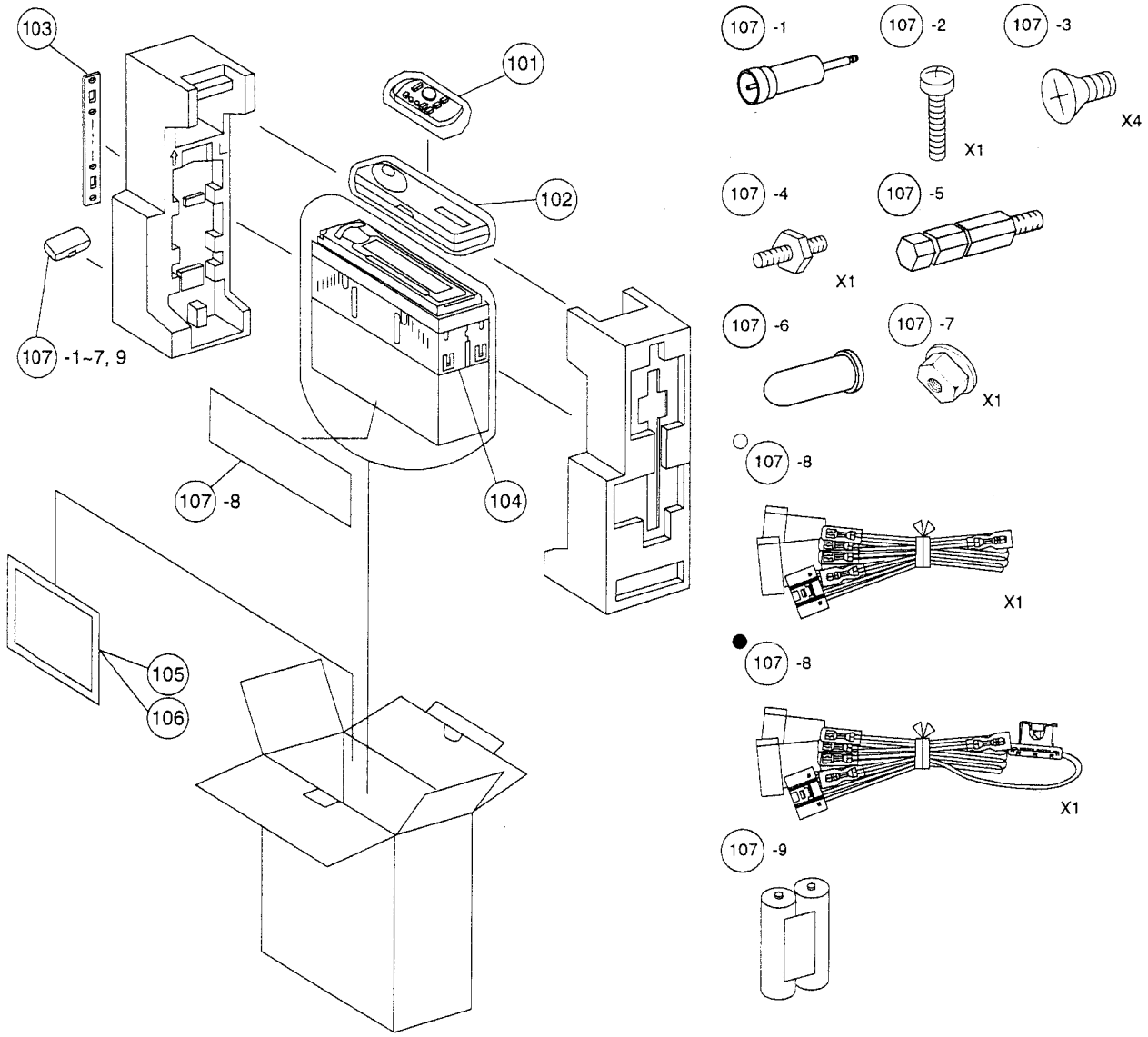
Packing Assembly Parts List

	Symbol No.	Part No.	Description
	101	01T00716K02	Assy., Remote Controller
	102	15D10867Y01	Carrying, Case
	103	07E09438S01	Bracket, Strap Receiver
	104	15E21170S01	Case, Inner
	105	68P11199Y25	Owner's Manual (E/F/S)
	106	68P11199Y26	Owner's Manual (I/G/S)
○	107	01E28035S01	Assy., Kit Installation
●	107	01E28557S01	Assy., Kit Installation
	107-1	01T15394Y02	Antenna, JASO-ISO
	107-2	03E27862S01	Screw, TPG2 (M1.7X4)

	Symbol No.	Part No.	Description
	107-3	03E10420S02	Screw, MCH (M5X8)
	107-4	03E11374S01	Stud, Bolt
	107-5	03E27739S01	Bolt, Hex. A (M5)
	107-6	75E28553S01	Cap, Rubber
	107-7	02E20771S01	Nut, Hex. (M5)
○	107-8	01E28554S01	Assy., Power Wire
●	107-8	01E28061S01	Assy., Power Wire (15A)
	107-9	60T55630W01	Battery, MGN R03 (NB) UM-4

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Packing Method View



NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Specifications

<FM RADIO>

Intermediate Frequency	10.7±0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (98.1MHz, Mono, 30dB S/N)	17.2dBf
-3dB Limiting Sensitivity (98.1MHz)	21.2dBf
S/N Ratio (98.1MHz, Stereo)	55dB
Image Rejection (106.1MHz)	40dB
IF Rejection (90.1MHz)	60dB
Distortion (Input 60dBμ, 98.1MHz)	0.7%
Frequency Response (98.1MHz, Ref. 400Hz)	100Hz : 0±3dB
	10kHz : -14±3dB
Stereo Separation (1kHz)	20dB
Residual Noise (98.1MHz, Ref. 400Hz)	30±10dB
PS Sensitivity (98.1MHz)	36.2dBf

<MW RADIO>

Intermediate Frequency	1st. : 10.7MHz
	2nd. : 450kHz
Frequency Range	531~1,602kHz
Sensitivity (20dB S/N, 999kHz)	40dB
S/N Ratio (999kHz)	44dB
Image Rejection (1,404kHz)	40dB
IF Rejection (603kHz)	50dB
Distortion (999kHz)	1.5%
Frequency Response (999kHz, Ref. 400Hz)	100Hz : -3±4dB
	2.5kHz : -3+3, -5dB

<LW RADIO>

Intermediate Frequency	1st. : 10.7MHz
	2nd. : 450kHz
Frequency Range	153~281kHz
Sensitivity (20dB S/N, 216kHz)	44dB
S/N Ratio (216kHz)	44dB
Image Rejection (270kHz)	35dB
IF Rejection (162kHz)	50dB
Distortion (216kHz)	1.5%
Frequency Response (216kHz, Ref. 400Hz)	100Hz : -3±4dB
	2.5kHz : -3+3, -5dB

<GENERAL>

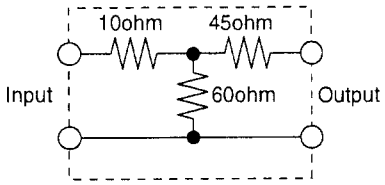
Power Supply	DC14.4V
Power Output (T.H.D. 10%) /Impedance	25W/ch/4ohm (○)
	16W/ch/4ohm (●)
Pre-Output Voltage/Impedance	1.6V/10kohm
Semiconductors	35IC's, 61Transistors, 42Diodes, 8Zener Diodes (○)
	30IC's, 58Transistors, 40Diodes, 7Zener Diodes (●)
Dimensions (W×H×D)	Nose : 188×58×26.5mm
	Chassis : 178×50×155mm
Weight	1.3kg

NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.
○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Adjustment Procedures

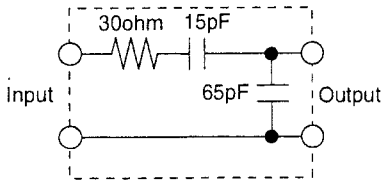
1. FM/AM SECTION

(1) Dummy Antenna Circuit



For 50 ohm FM Signal Generator

Figure 1



For 50 ohm AM Signal Generator

Figure 2

(2) Connections

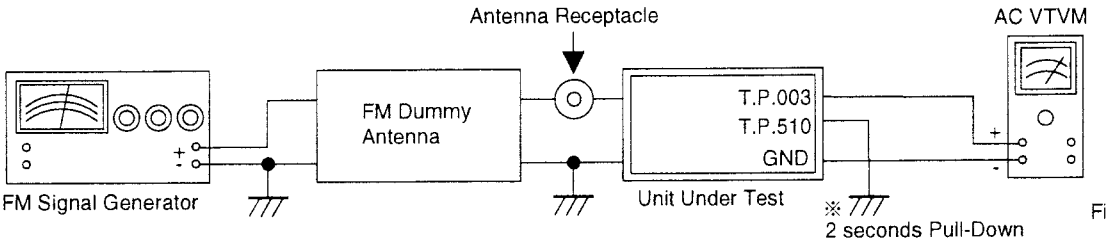


Figure 3

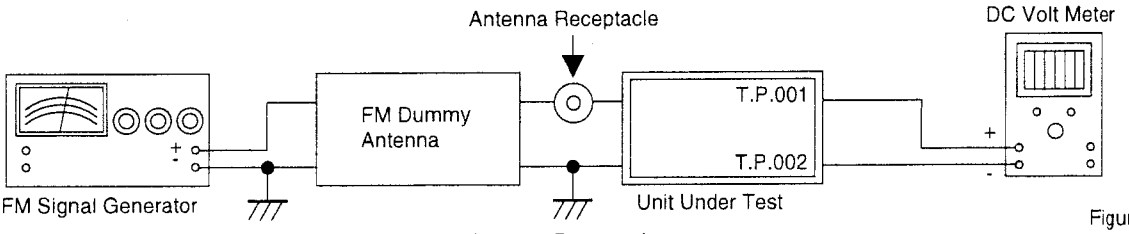


Figure 4

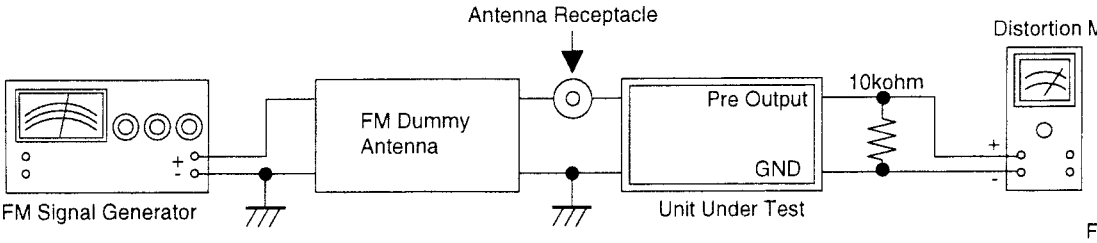


Figure 5

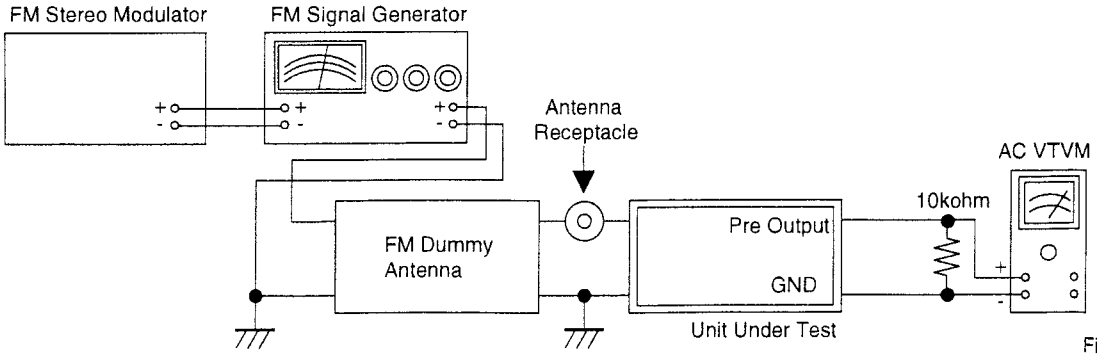


Figure 6

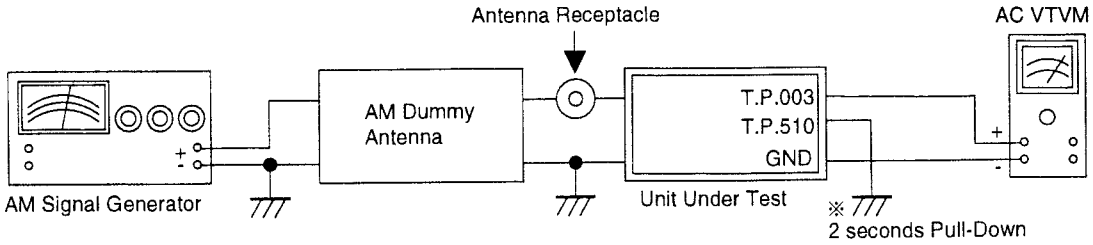


Figure 7

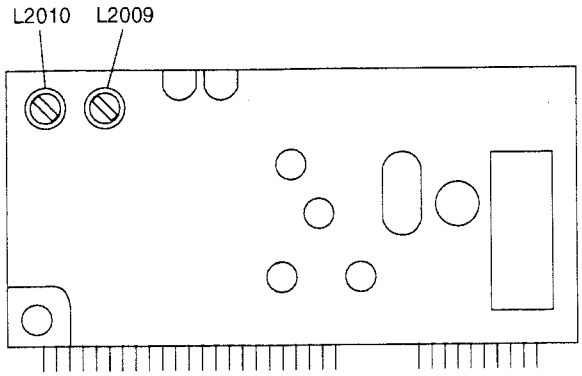
(3) Control Settings

Power Switch	ON	Bass Control	Center Position
Fader Control	Center Position	Band Switch	FM/AM (MW)
Balance Control	Center Position	BBE Switch	OFF
Treble Control	Center Position	Others	OFF

(4) Adjustment Procedures

Step	Description	Connection	Signal Generator	Dial Control	Test Point / P.W.Board Coordinates	Adjustment
1	Signal Meter Auto Adjustment	Figure 3	98.1MHz, 52dBμ (Mod. OFF)	98.1MHz	T.P.003 (3-F) T.P.510 (3-F)	Auto Adjustment : After setting up of Signal Genarator, short GND and T.P.510 (Pull-Down) for 2 seconds.
2	IF Adjustment	Figure 4	98.1MHz, 72dBμ (Mod. 400Hz, Dev. 40kHz)	98.1MHz	T.P.001 (4-B) T.P.002 (4-B)	Adjust L2009 to 0±100mV.
3	Distortion Adjustment	Figure 5	98.1MHz, 72dBμ (Mod. 400Hz, Dev. 40kHz)	98.1MHz	Pre Output	Adjust L2010 to less than 0.5%.
4	IF Confirmation	Figure 4	98.1MHz, 72dBμ (Mod. 400Hz, Dev. 40kHz)	98.1MHz	T.P.001 (4-B) T.P.002 (4-B)	Confirm T.P.001 and T.P.002 output voltage is 0±100mV. (NG : Proceed same adjustment under Step 2.)
5	Separation Adjustment	Figure 6	98.1MHz, 72dBμ (Mod. 1kHz, Dev. 36kHz, Stereo, Lch only)	98.1MHz	Pre Output	Adjust VR201 to for Rch output to be minimum, and confirm Lch and Rch output level difference is more than 30dB.
6	AM Seek Stop Auto Adjustment	Figure 7	999kHz, 32dBμ (Mod. 400Hz, 30%)	999kHz	T.P.003 (3-F) T.P.510 (3-F)	Auto Adjustment : After setting up of Signal Genarator, short GND and T.P.510 (Pull-Down) for 2 seconds.

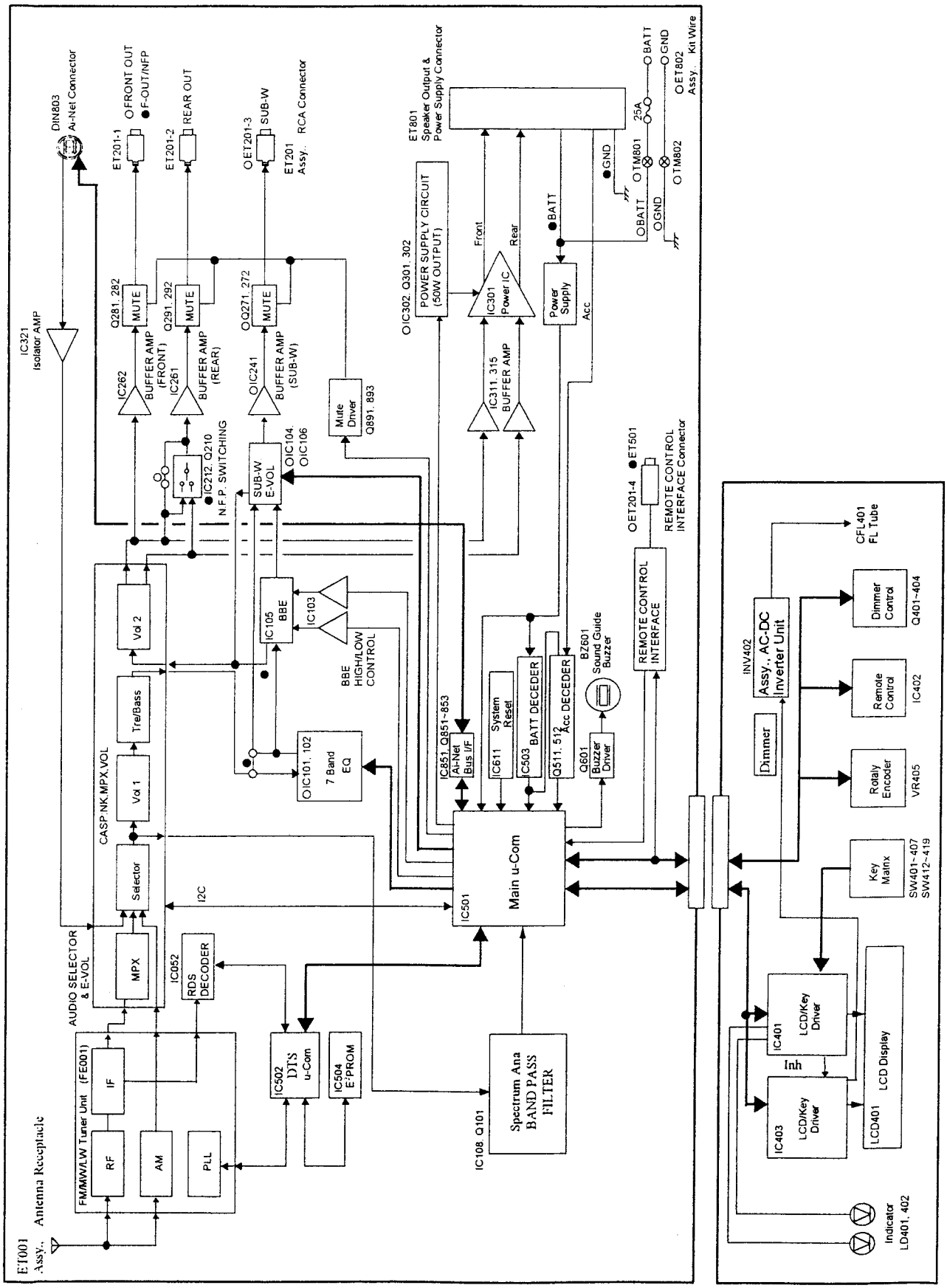
Adjustment Locations



FM/MW/LW Tuner Unit (FE001)

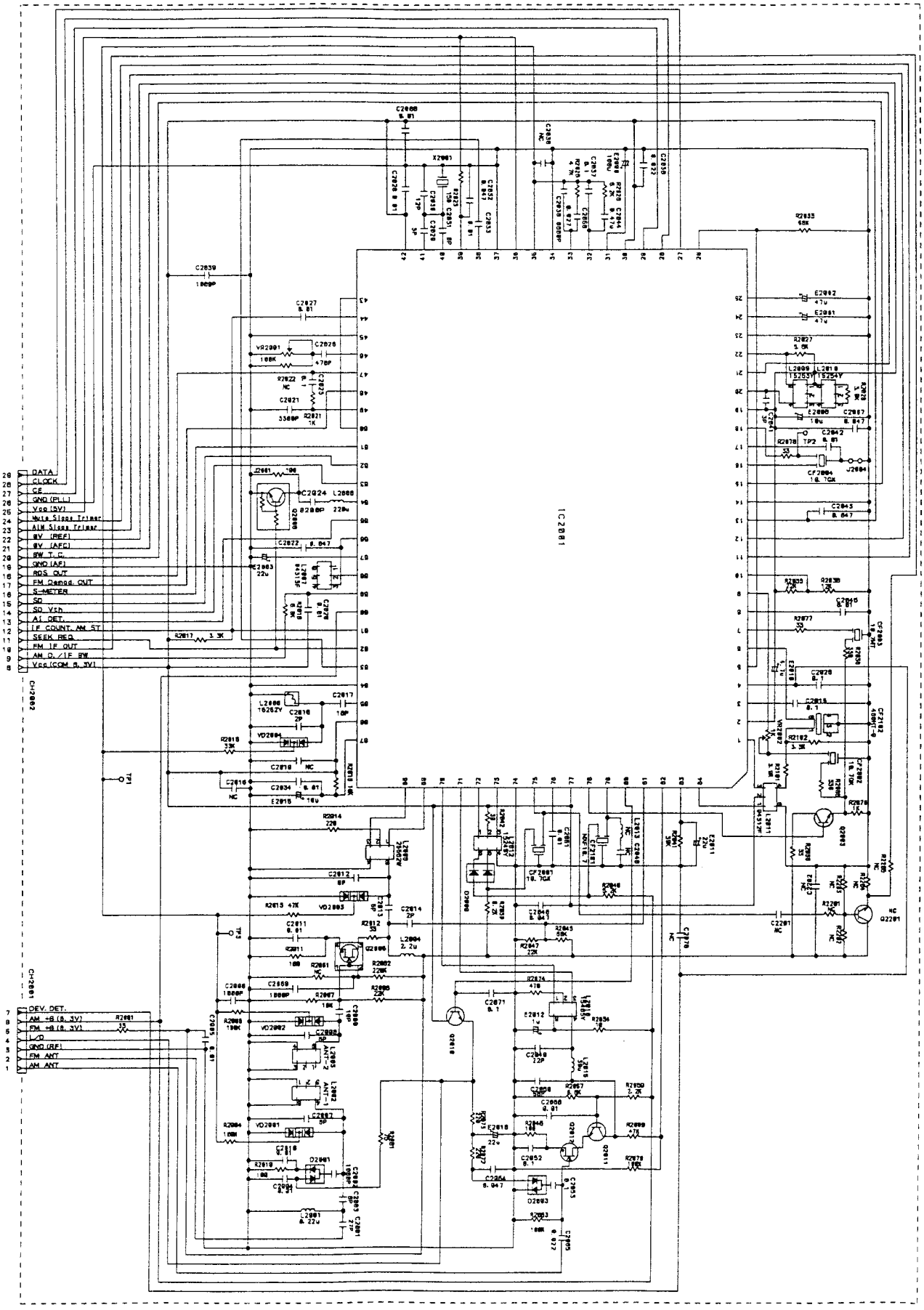
NOTE : For the Test Points (T.P.001~003, 510) and Adjustment Parts (VR201), refer to the Parts Layout on P.W.Boards and Wiring Diagram.

Block Diagram



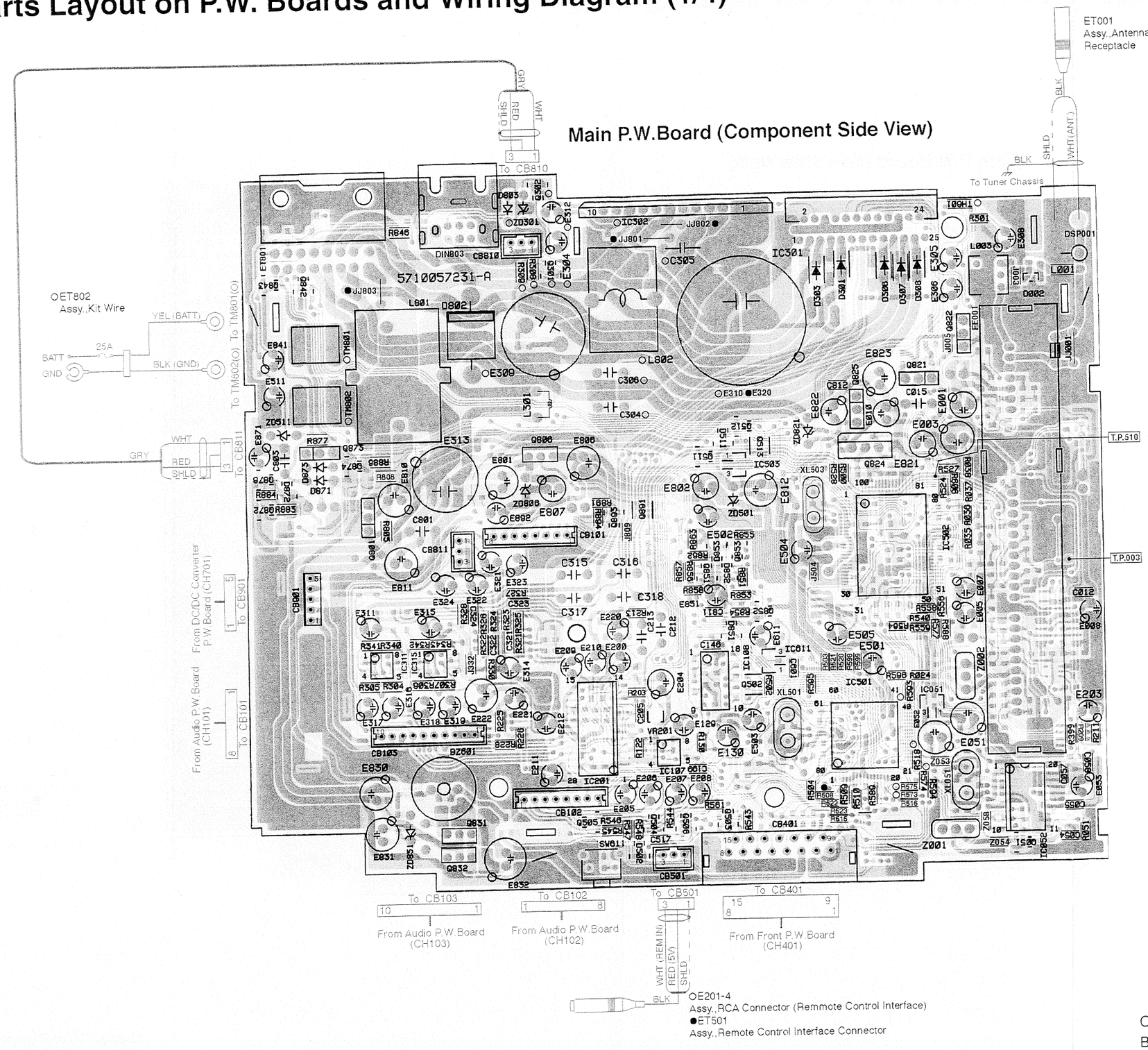
NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Tuner Schematic Diagram



Parts Layout on P.W. Boards and Wiring Diagram (1/4)

Main P.W.Board (Component Side View)



NOTE : ○ : For CTA-1505R Model Only,
● : For CTA-1502R Model Only,
Others : Common.

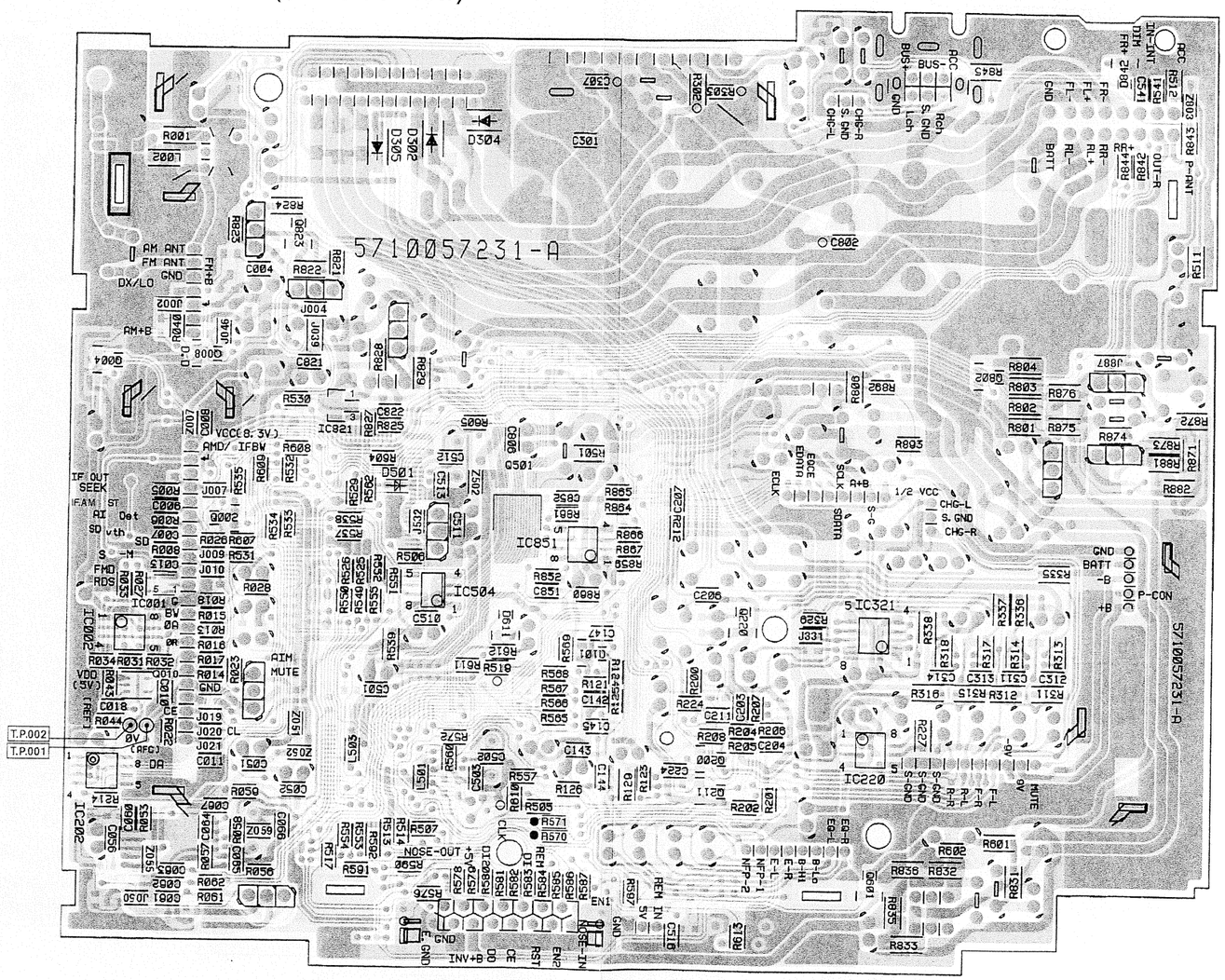
○E201-4
Assy.,RCA Connector (Remmote Control Interface)
●ET501
Assy.,Remote Control Interface Connector

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

CTA-1505R/
CTA-1502R

Parts Layout on P.W. Boards and Wiring Diagram (2/4)

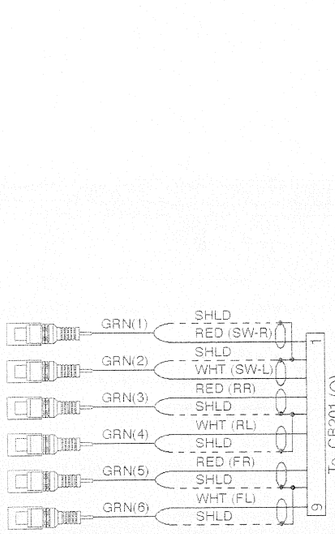
Main P.W.Board (Foil Side View)

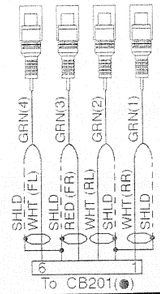


NOTE : ○ : For CTA-1505R Model Only,
● : For CTA-1502R Model Only,
Others : Common.

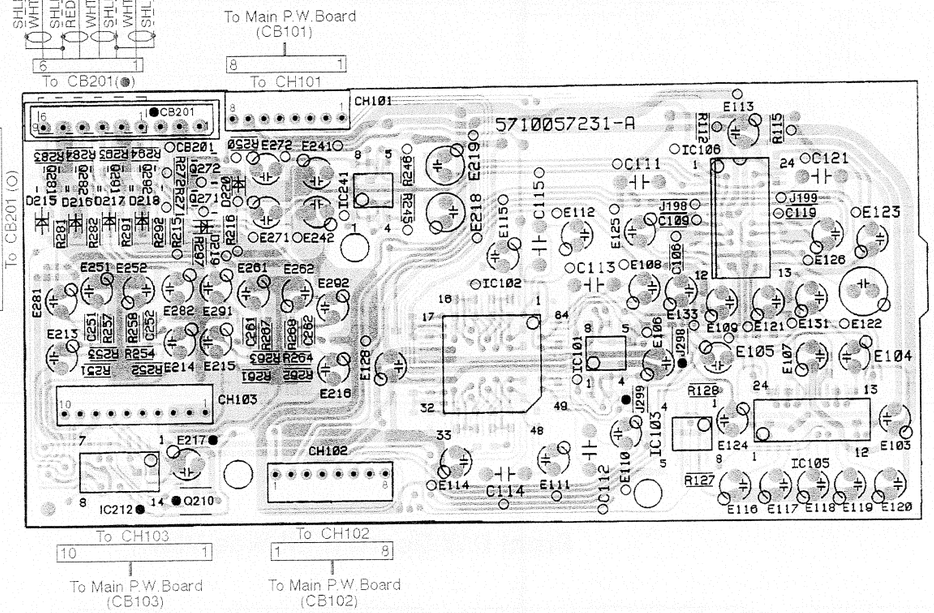
Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Parts Layout on P.W. Boards and Wiring Diagram (3/4)

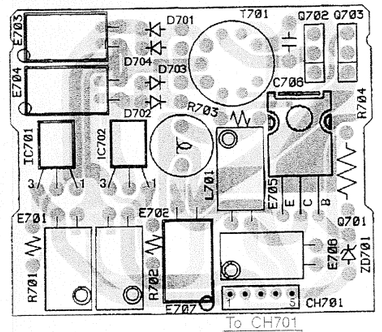




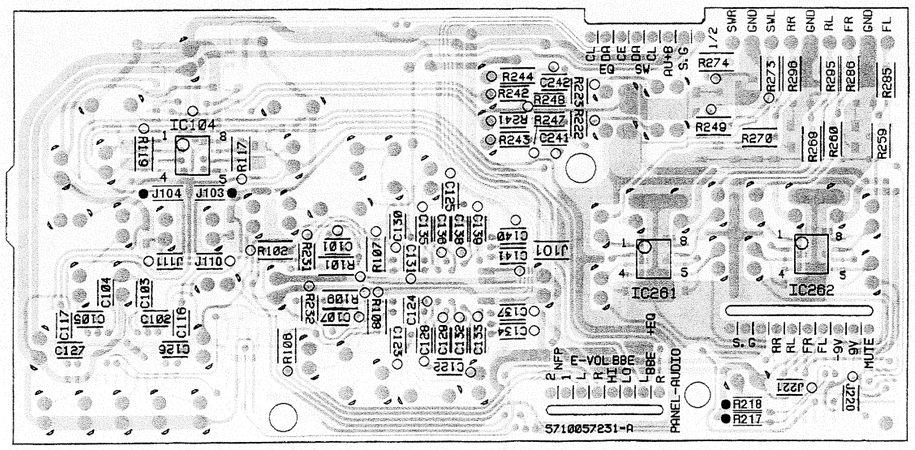
Audio P.W.Board (Component Side View)



DC/DC Converter P.W.Board (Component Side View)



Audio P.W.Board (Foil Side View)



Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Parts Layout on P.W. Boards and Wiring Diagram (4/4)

1

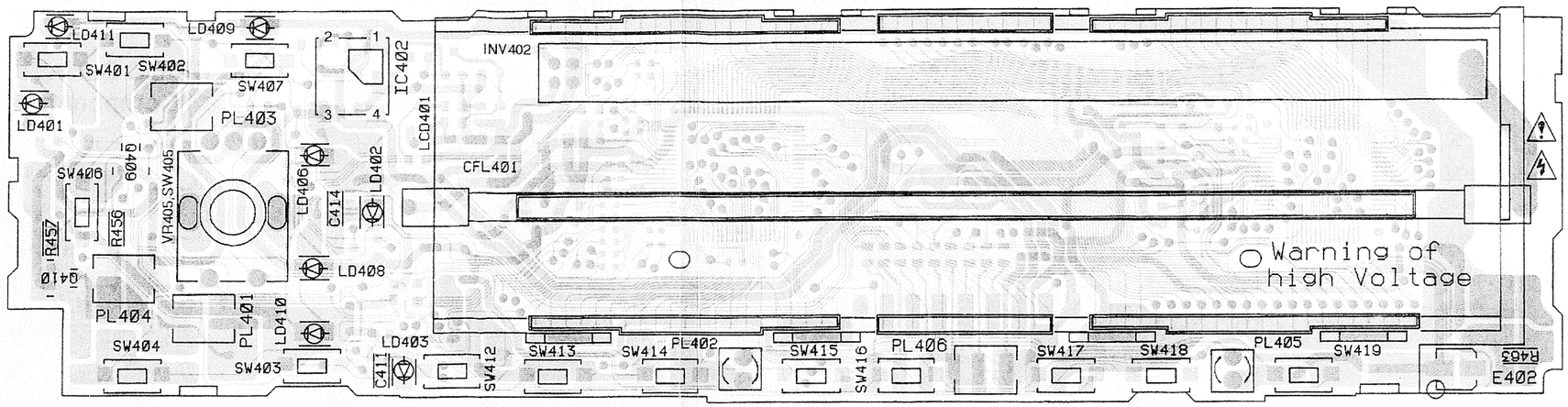
2

3

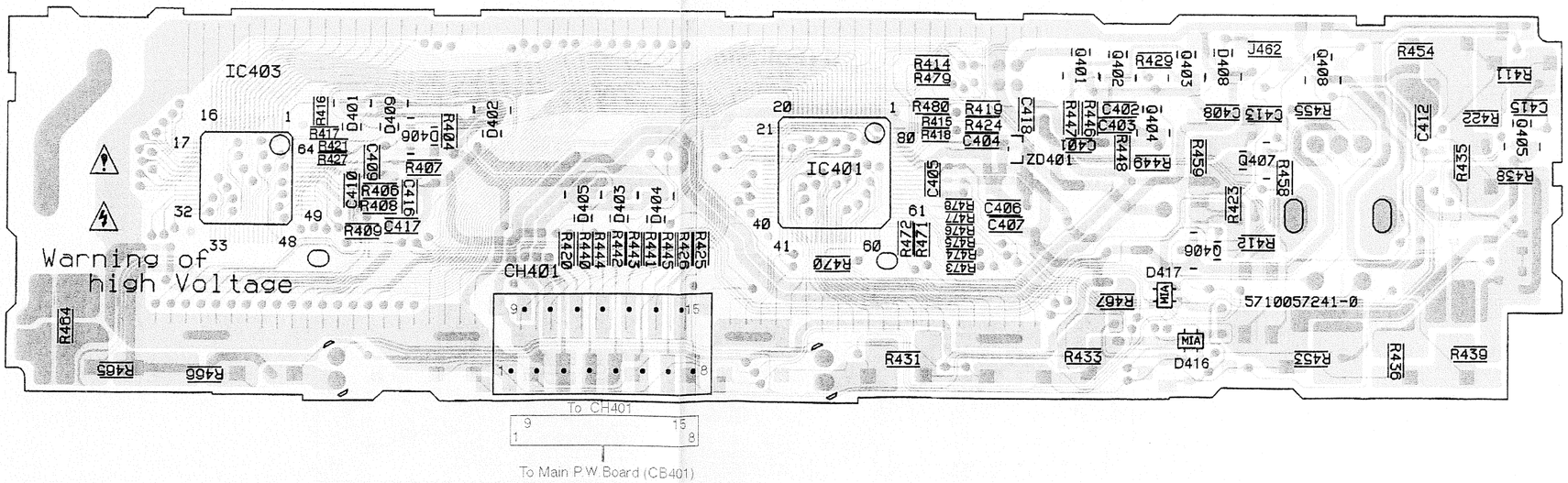
4

5

Front P.W.Board (Component Side View)

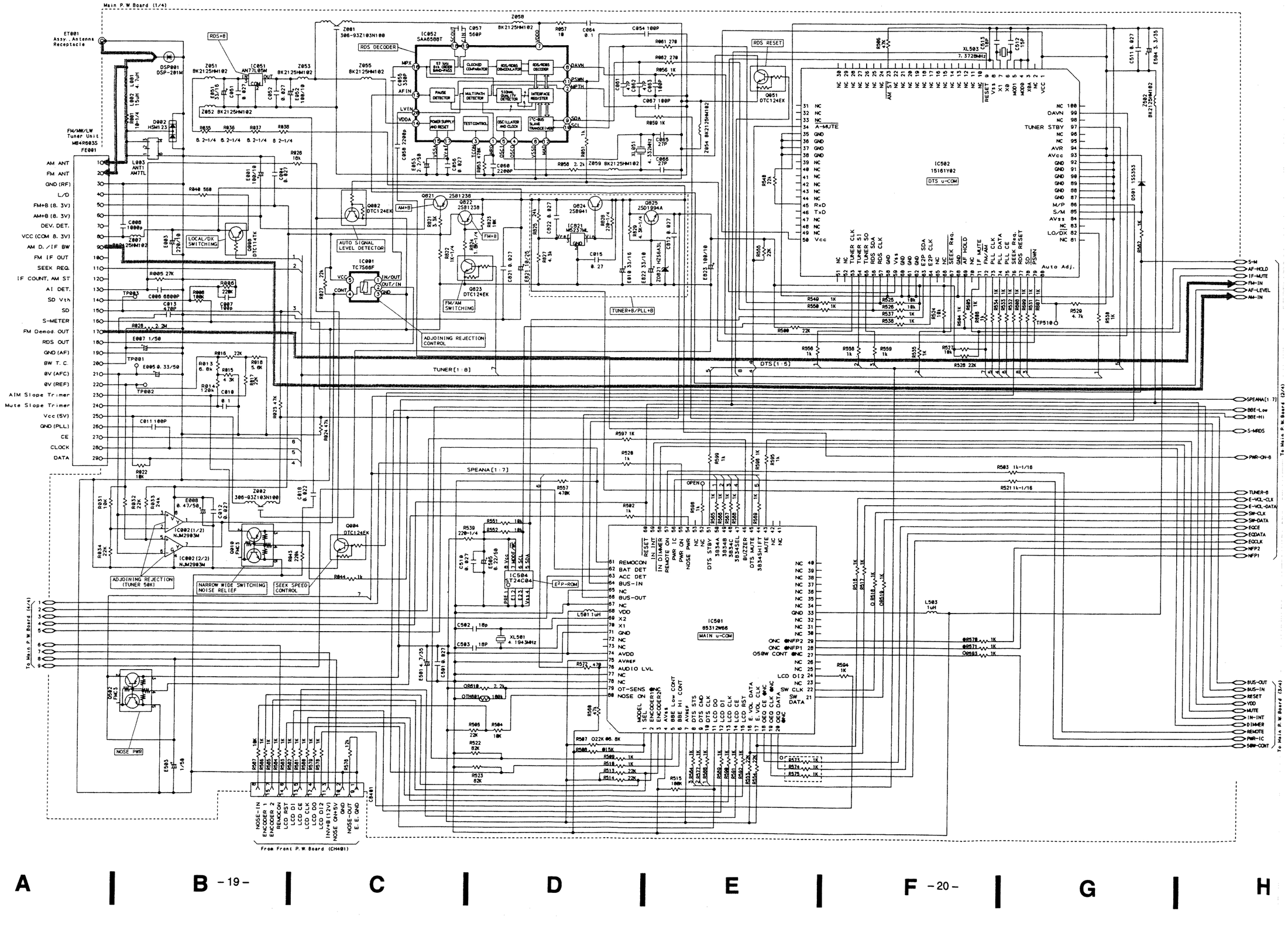


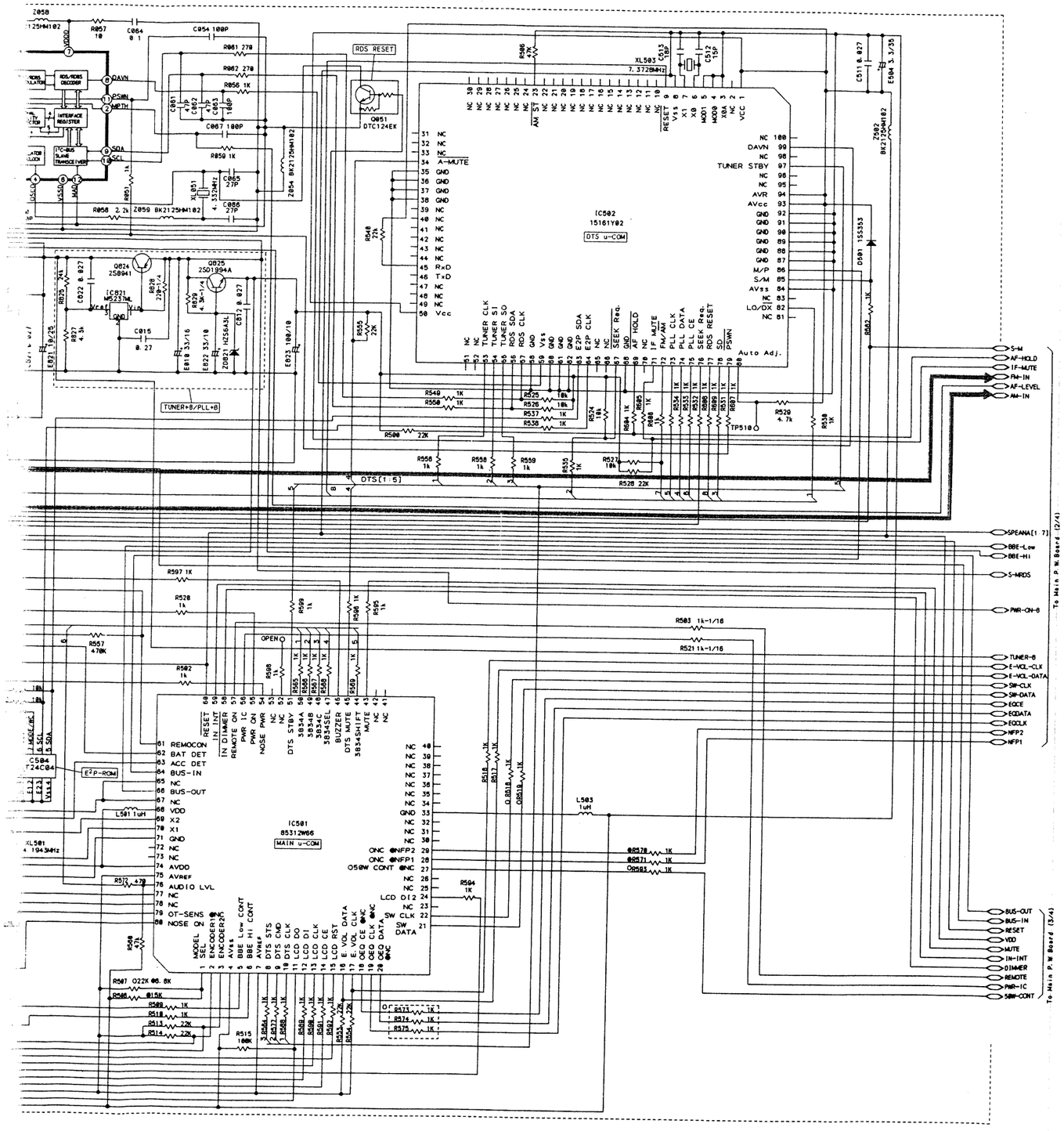
Front P.W.Board (Foil Side View)



Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Schematic Diagram (1/6)





IC001

1, 2	4.8V
3	0V
4	7.8V
5	8.3V

IC002

1	8.2V	5	6.3V
2	3.3V	6	4.1V
3	4V	7	7.7V
4	0V	8	8.2V

IC051

1	13.6V
2	0V
3	4.9V

IC052

1, 2	0.4V	9, 10	4.8V
3	0V	11, 12	0V
4	2.4V	13	2.5V
5	2.2V	14	4.9V
6	0V	15	0V
7	5V	16–20	2.5V
8	4.9V		

IC501

1	5V	28	○ NC	61	3.9V
2, 3	0.4V		● 5V	62	4.4V
4	0V	29	○ NC	63	3V
5	1.7V		● 0V	64	5V
6	2.7V	30–32	NC	65–67	0V
7–10	5V	33	0V	68	5V
11	4.6V	34–42	NC	69	3V
12	2.9V	43	0V	70	2.7V
13	3.8V	44	5V	71	0V
14	2.3V	45	4.8V	72, 73	NC
15–17	5V	46	0V	74, 75	5V
18–20	○ 5V	47	0.2V	76	0.4V
	● NC	48–50	0V	77, 78	0V
21	1V	51	5V	79	○ 5V
22	5V	52, 53	NC		● NC
23	NC	54–56	5V	80	2.5V
24	2.9V	57	0.7V		
25, 26	NC	58	5V		
27	○ 5V	59	0V		
	● NC	60	5V		

IC502

1	5V	51, 52	NC	75–79	0V
2	NC	53–55	5V	80	5V
3–5	0V	56, 57	4.8V	81	NC
6	2.1V	58	0V	82	0V
7	1.6V	59	5V	83	NC
8	0V	60–62	0V	84	0V
9	5V	63, 64	5V	85	0.7V
10–22	NC	65, 66	NC	86	0.3V
23	0V	67	3.5V	87–92	0V
24–33	NC	68	0V	93, 94	5V
34	4.8V	69	2.6V	95, 96	NC
35–38	0V	70	NC	97	5V
39–44	NC	71	0V	98	NC
45, 46	5V	72	3.4V	99	4.9V
47–49	NC	73	5V	100	NC
50	5V	74	4.7V		

IC504

1–4	0V
5–8	5V

IC821

1	13.5V
2	0V
3	1.2V

	E	C	B	MODE
Q002	0V	0.2V	0V	
Q004	0V / 0V	0V / 0.17V	5V / 0V	SEEK / STOP
Q008	0.3V	8.3V	0V	
Q051	0V	2.2V	0V	
Q821	8.3V	8.2V	7.6V	MW, LW ON
Q822	8.3V	8.2V	7.6V	FM ON
Q823	0V	0V	3.4V	FM ON
Q824	14.3V	8.3V	13.7V	
Q825	4.8V	14.3V	5.4V	

	1	2	3	4	5
Q010	NC	1.2V	4.8V	0V	0V
Q502	NC	4.9V	5V	4.5V	0V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

NOTE : ○ : For CTA-1505R Model Only,
● : For CTA-1502R Model Only,
Others : Common.

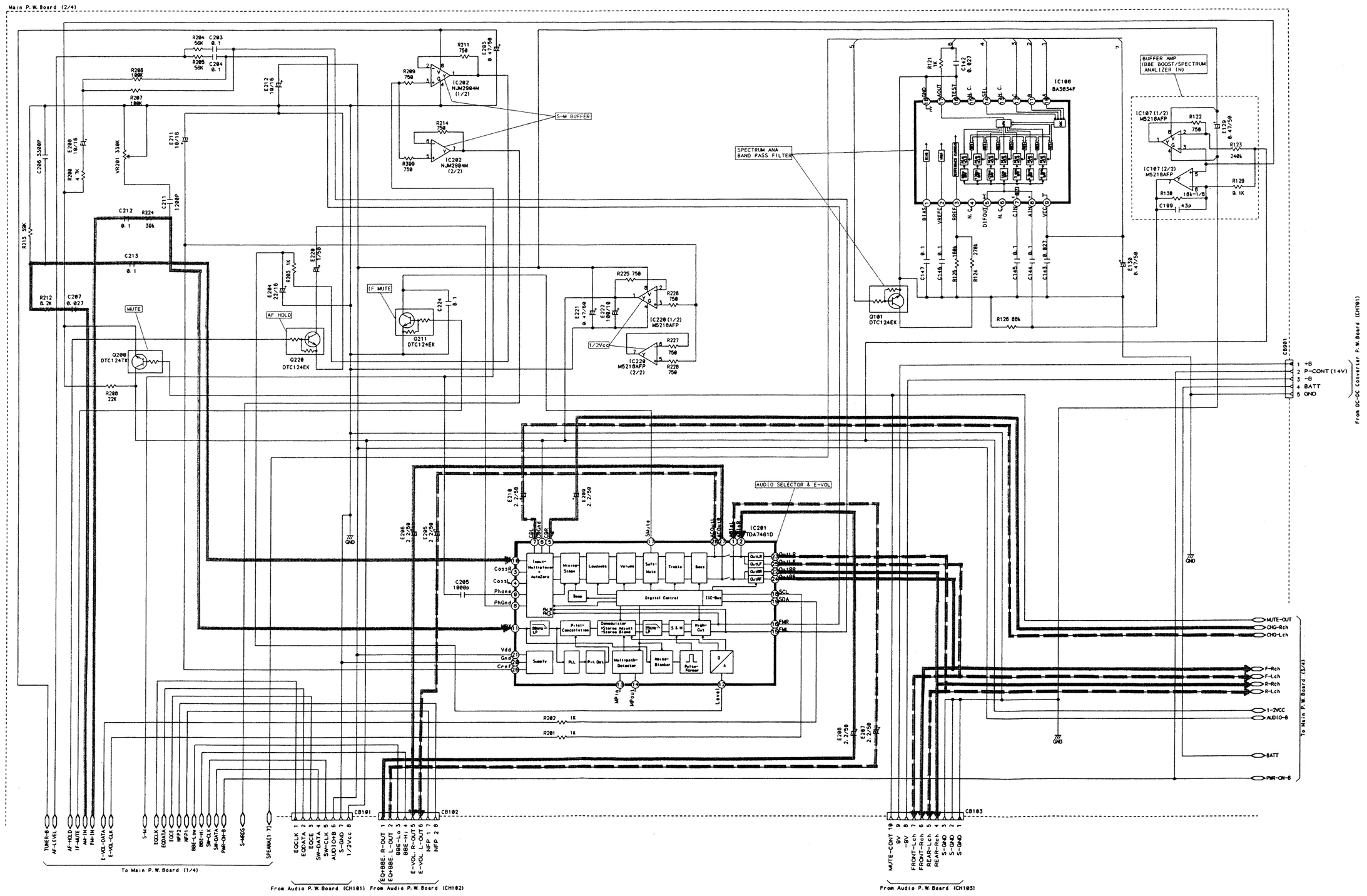
NOTE:

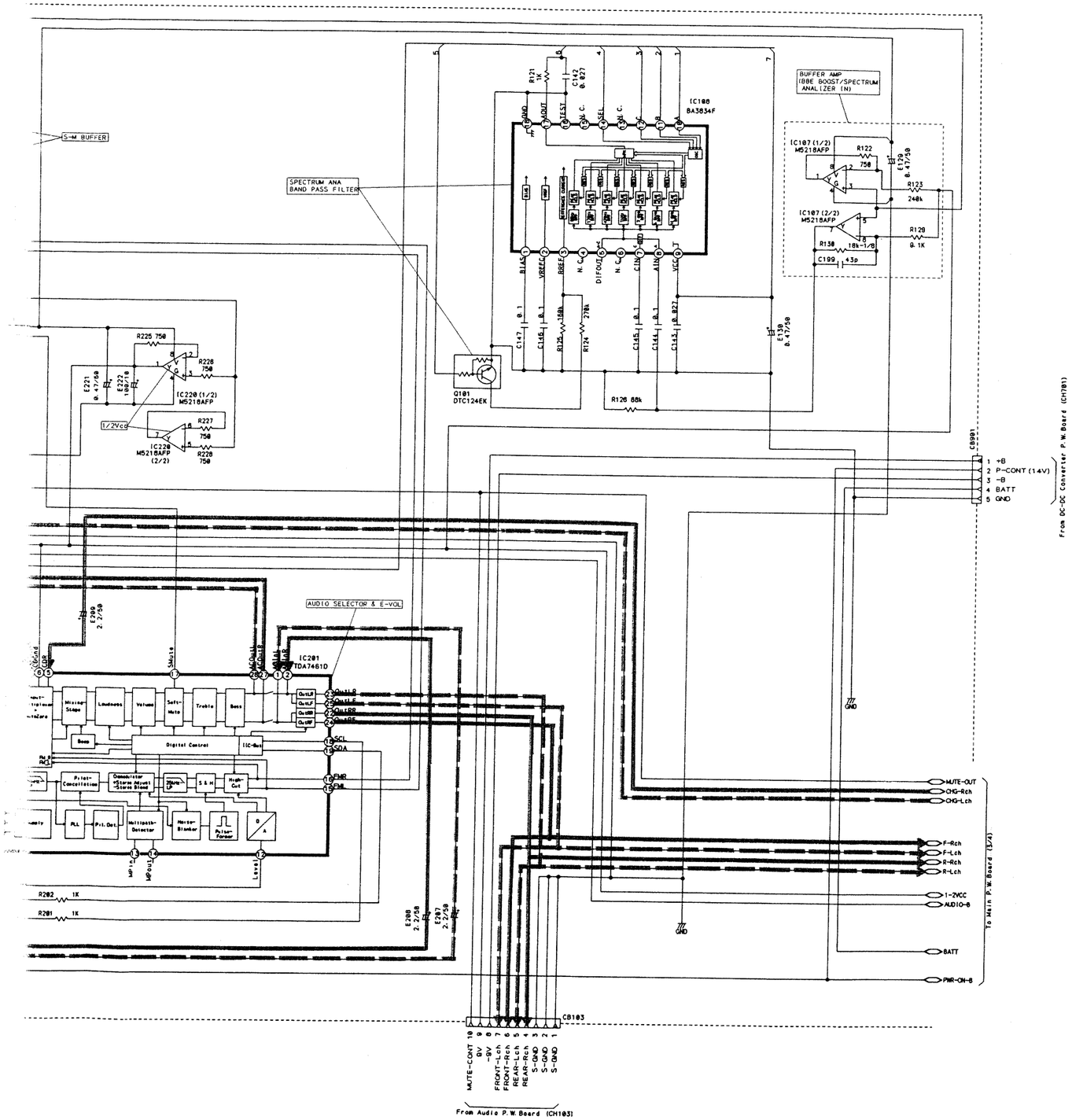
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

CTA-1505R/
CTA-1502R

CTA-1505R/
CTA-1502R

Schematic Diagram (2/6)





IC107

1~3	3.9V
4	0V
5~7	3.9V
8	8.7V

IC108

1	2.5V	13	NC
2	1.5V	14	4.7V
3	2.5V	15	NC
4~6	NC	16	0V
7, 8	2.5V	17	1.8V
9	5V	18	0V
10~12	2.5V		

IC201

1, 2	4.3V	15, 16	4.3V
3, 4	NC	17	4.8V
5~7	4.3V	18, 19	5.1V
8	3.8V	20	0V
9	3.7V	21	8.7V
10, 11	4.3V	22~25	3.6V
12	0.9V	26~28	4.3V
13, 14	NC		

IC202

1~3	4.1V
4	0V
5~7	4.1V
8	8.7V

IC220

1~3	4.3V
4	0V
5~7	4.3V
8	8.7V

	E	C	B
Q101	0V	0.5V	2.3V
Q211	0V	5V	0.2V
Q200	3.7V	4.3V	-4.5V
Q220	0V	0V	2.6V

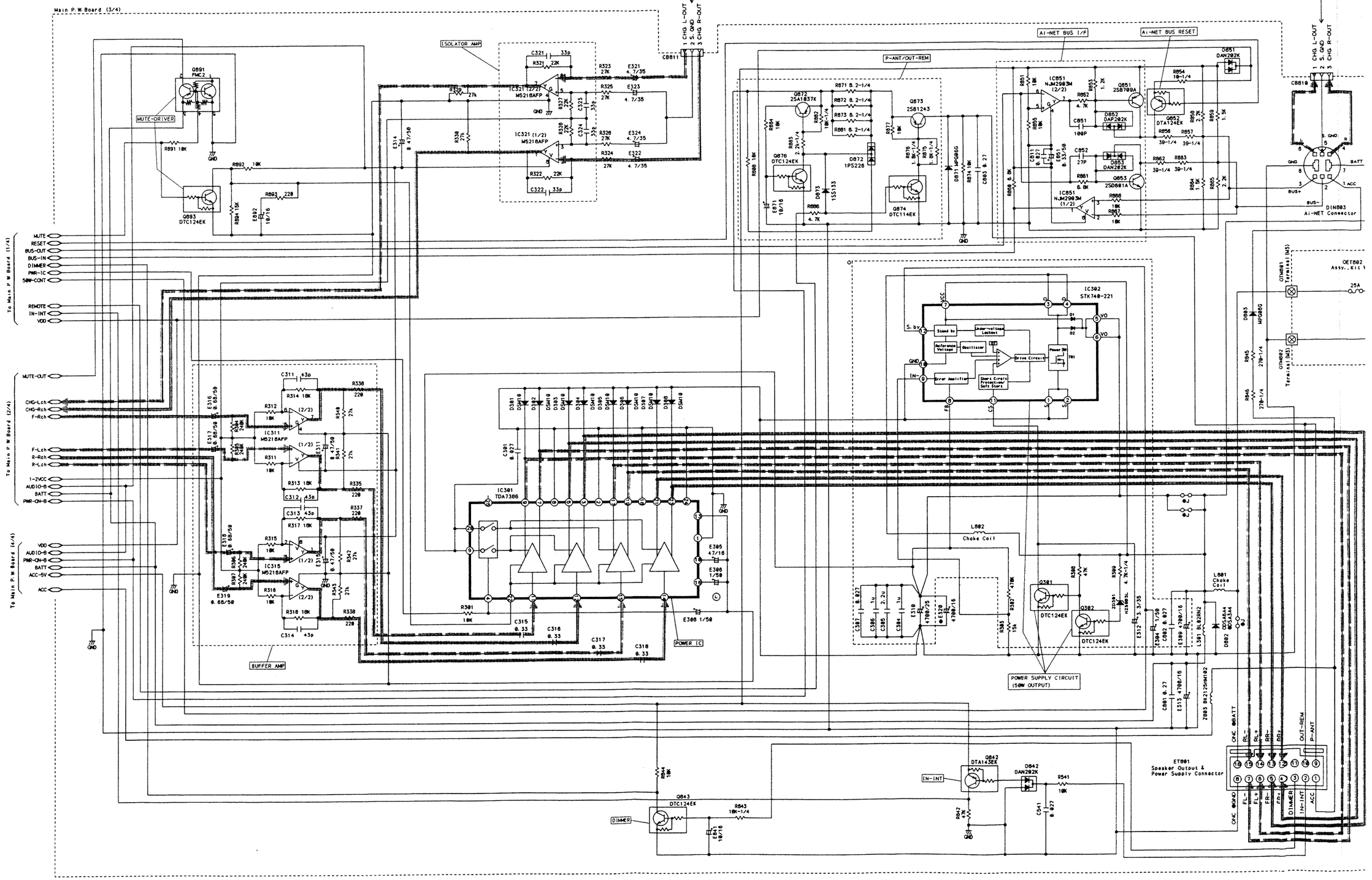
[Measuring Conditions]

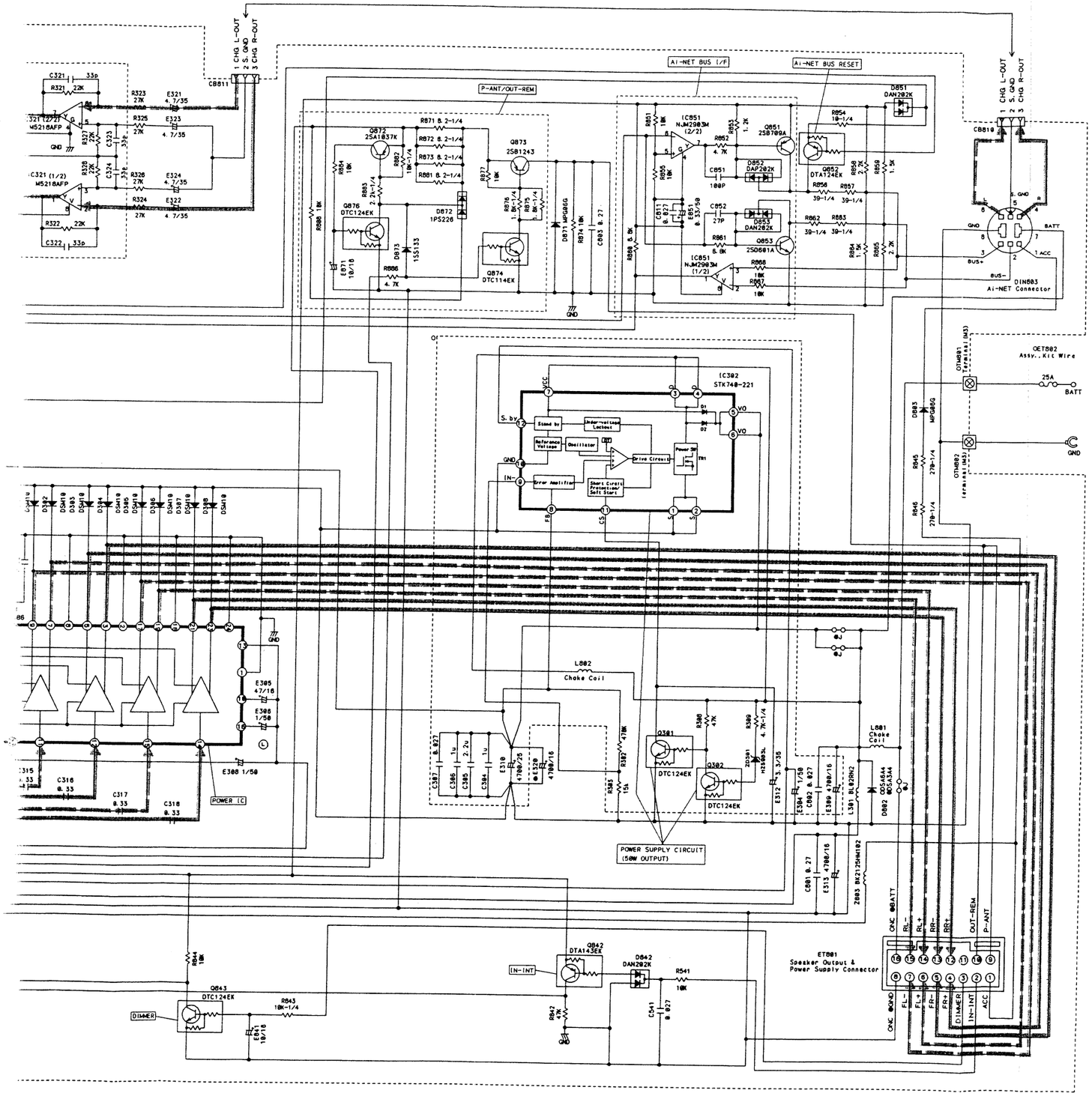
- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

NOTE:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Schematic Diagram (3/6)





IC301

1, 2	0V	14–17	7V
3	7V	18	0V
4	5V	19	7V
5	7V	20	14V
6	14V	21	7V
7	7V	22	5.3V
8	0V	23	7V
9–12	7V	24	0V
13	0V	25	NC

○ IC302

1, 2	0V	9	0.5V
3, 4	14V	10	0V
5, 6	17V	11	0.6V
7	14V	12	4.7V
8	17V		

IC311, 315

1~3	4.3V
4	0V
5~7	4.3V
8	8.7V

IC321

1, 2	4.4V
3	4.3V
4	0V
5	4.3V
6, 7	4.4V
8	8.8V

IC851

1	0V
2	2.9V
3	1.9V
4	0V
5	2.4V
6	0V
7, 8	4.9V

	E	C	B	MODE
○Q301	0V	0.5V	0V	
○Q302	0V	0V	4.4V	
Q842	5V	0V	5V	
Q843	0V	4.9V	0V	
Q851	5.9V	5.9V	5.9V	
Q852	5.9V	5.9V	5.9V	
Q853	5.9V	5.9V	5.9V	
Q872	14.2V	14.2V	14.5V	
Q873	14.2V	14.2V	13.5V	
Q874	0V	0V	3.4V	
Q876	0V	0V	9.8V	
Q893	0V / 0V	5V / 0V	0V / 4.7V	MUTE OFF / ON

	1	2	3	4	5	MODE
Q891	NC	14V / -4.5V	14V / 14V	3.4V / 0V	0V / 0V	MUTE ON / OFF

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

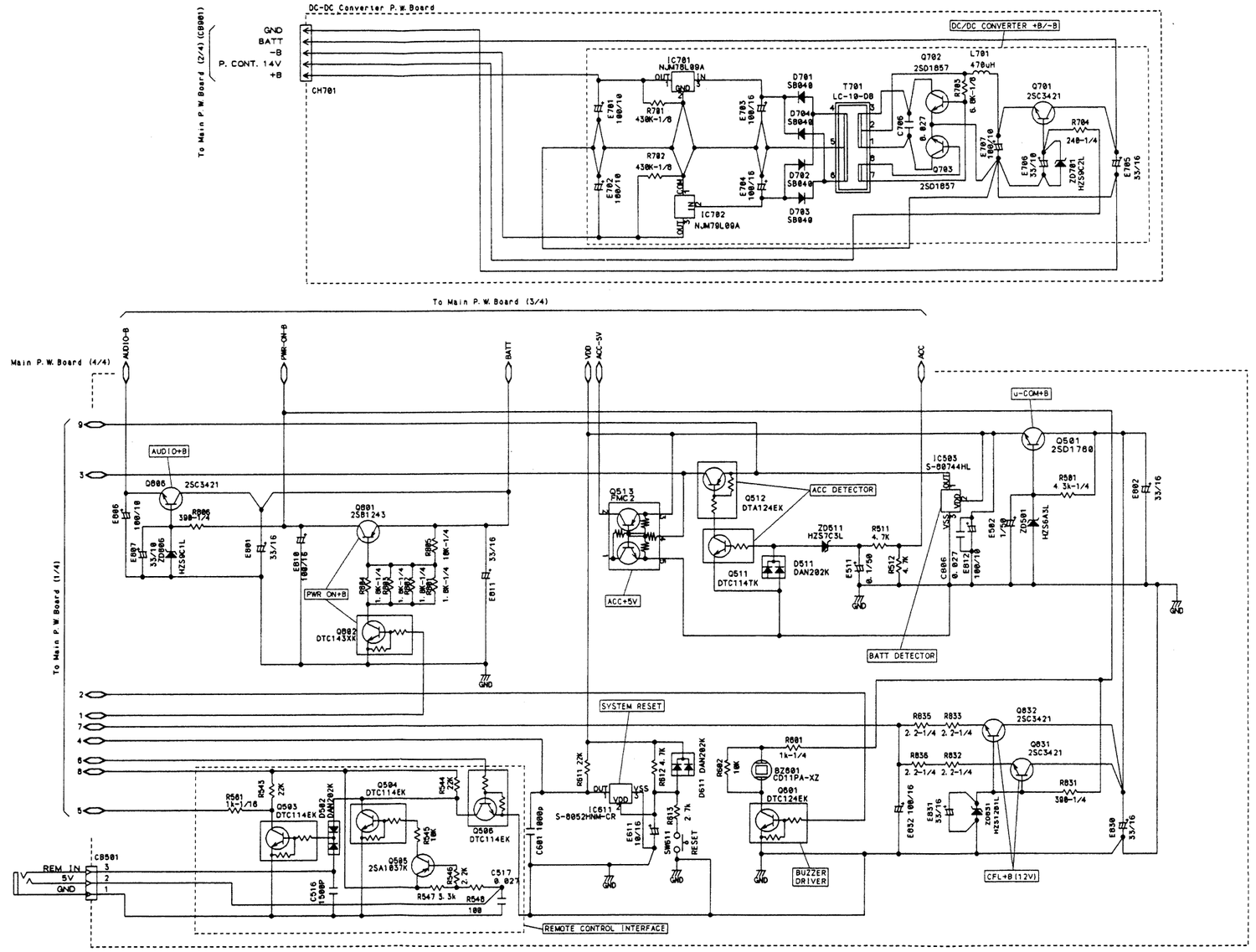
NOTE : ○ : For CTA-1505R Model Only,
● : For CTA-1502R Model Only,
Others : Common.

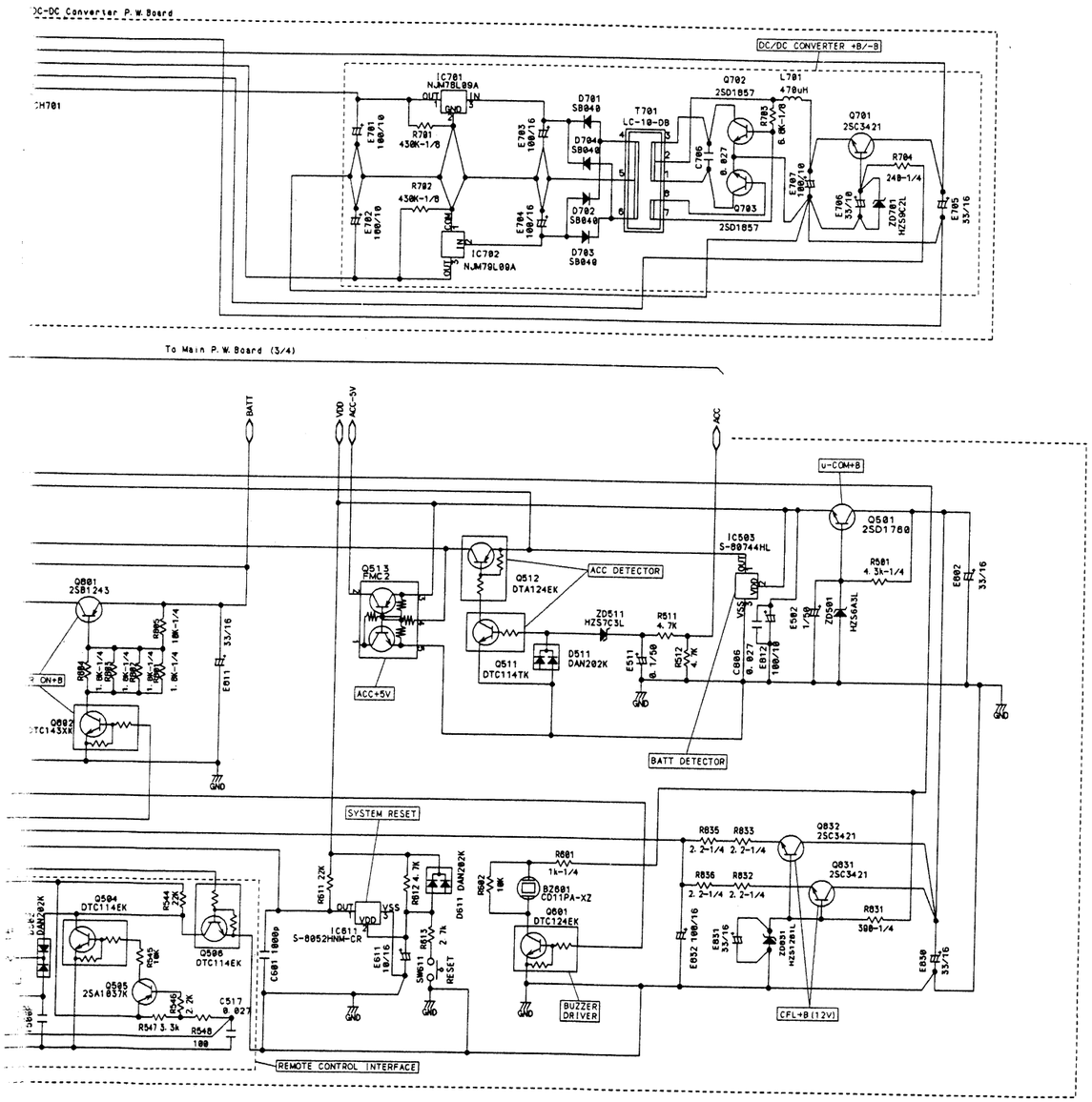
NOTE:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

CTA-1505R/
CTA-1502R

Schematic Diagram (4/6)





IC503

1	4.7V
2	5V
3	0V

IC611

1, 2	5V
3	0V

IC701

1	9V
2	0V
3	13.6V

IC702

1	0V
2	-13.6V
3	9V

	E	C	B		E	C	B
Q501	5V	5.6V	14.3V	Q701	9.8V	14.3V	9.1V
Q503	0V	4.7V	0V	Q702	0V	9V	0.7V
Q504	0V	0V	0V	Q703	0V	9V	-0.7V
Q505	4.9V	0V	4.9V	Q801	14.3V	14.2V	13.6V
Q506	0V	0V	1.5V	Q802	0V	0V	4.2V
Q511	0V	0V	4.6V	Q806	8.7V	14.3V	9.3V
Q512	4.8V	4.8V	0V	Q831	12.2V	14.3V	12.8V
Q601	0V / 14V	5V / 0V	0V / 0V	Q832	12.2V	14.3V	12.8V

	1	2	3	4	5
Q513	NC	4.9V	5V	4.7V	0V

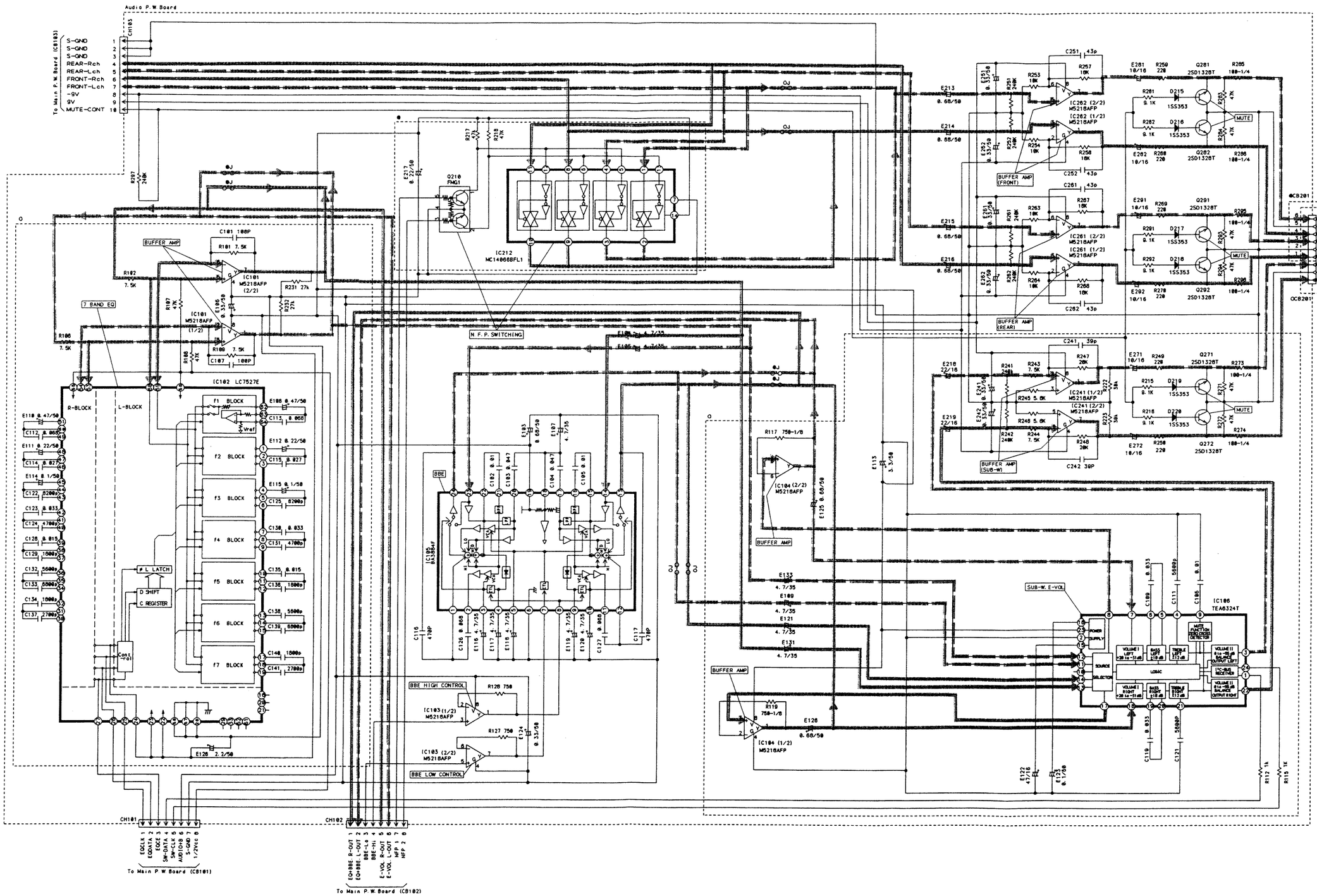
[Measuring Conditions]

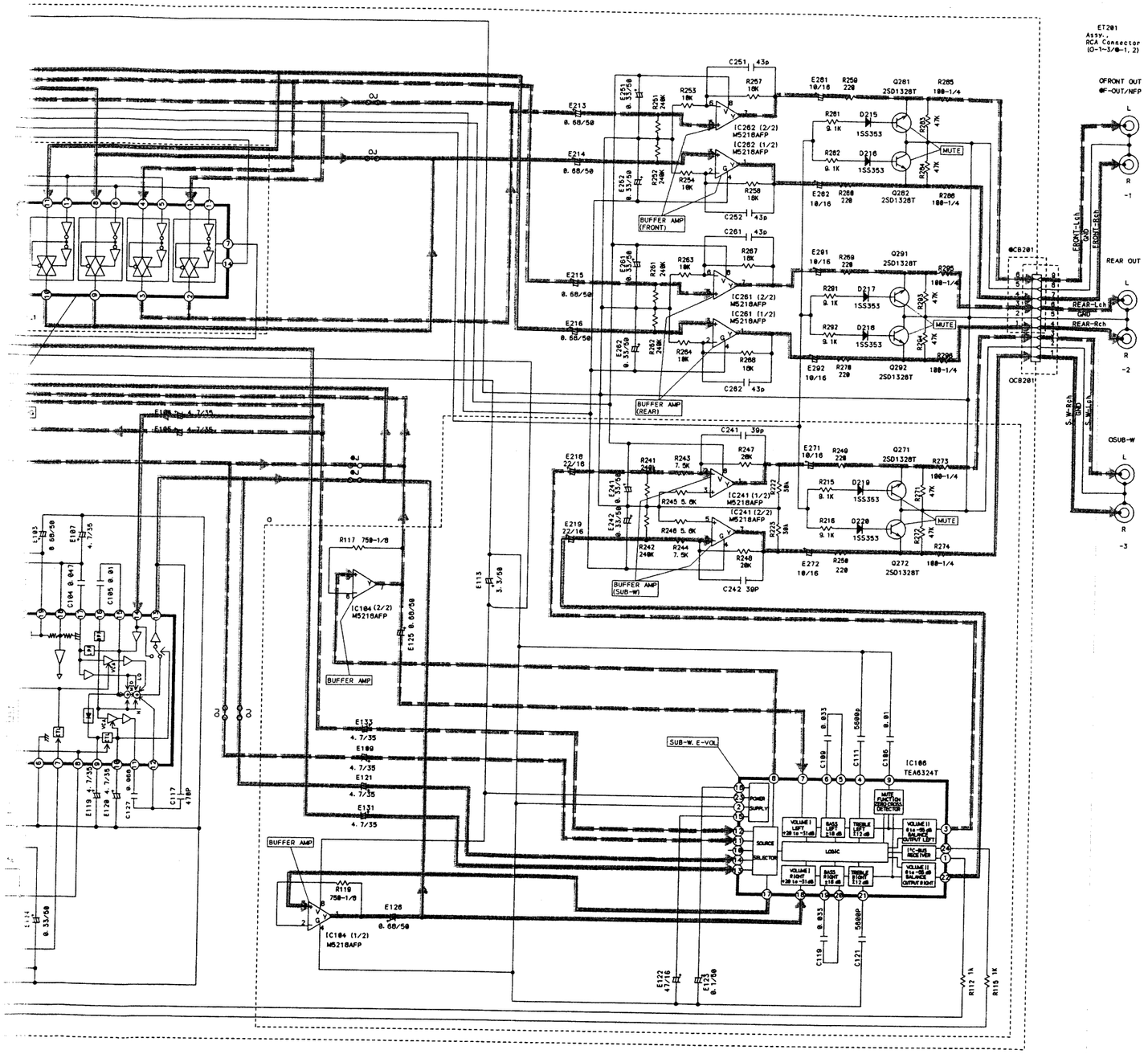
- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

NOTE : ○ : For CTA-1505R Model Only,
● : For CTA-1502R Model Only,
Others : Common.

NOTE:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (5/6)





○ IC101, 104

1~3	4.4V
4	0V
5~7	4.4V
8	8.8V

○ IC102

1	4.4V	29	NC
2	2.2V	30~32	5.9V
3, 4	4.4V	33	NC
5	2.2V	34~51	5.9V
6, 7	4.4V	52	NC
8	2.2V	53, 54	4.3V
9, 10	4.4V	55	5V
11~15	5.9V	56, 57	0V
16	NC	58	5V
17~19	5.9V	59, 60	4.3V
20, 21	NC	61	NC
22~24	5V	62	4.4V
25~27	5.9V	63	3.9V
28	0V	64	4.4V

IC103

1~3	1.7V
4	0V
5~7	1.7V
8	8.6V

IC105

1, 2	4.4V	10	4V
3, 4	4V	11~16	4.4V
5	3V	17, 18	4.3V
6	0V	19	8.9V
7, 8	1.7V	20	4.3V
9	3.7V	21~24	4.4V

○ IC106

1	5V	11~14	4.3V
2	0V	15	8.7V
3~7	4.3V	16~22	4.3V
8	8.7V	23	8.7V
9	4.3V	24	5V
10	NC		

● IC212

1~4	3.6V
5	0V
6	7.8V
7	0V
8~11	3.6V
12	0V
13, 14	8.7V

○ IC241

1~3	0V
4	-9V
5~7	0V
8	9V

IC261, 262

1~3	0V
4	-9V
5~7	0V
8	9V

	E	C	B	MODE
○Q271	0V / 0V	0V / 0V	0.7V / 0V	MUTE ON / OFF
○Q272	0V / 0V	0V / 0V	0.7V / 0V	MUTE ON / OFF
Q281	0V / 0V	0V / 0V	0.7V / 0V	MUTE ON / OFF
Q282	0V / 0V	0V / 0V	0.7V / 0V	MUTE ON / OFF
Q291	0V / 0V	0V / 0V	0.7V / 0V	MUTE ON / OFF
Q292	0V / 0V	0V / 0V	0.7V / 0V	MUTE ON / OFF

	1	2	3	4	5
●Q210	0V	8.7V	0V	0V	4.8V

[Measuring Conditions]

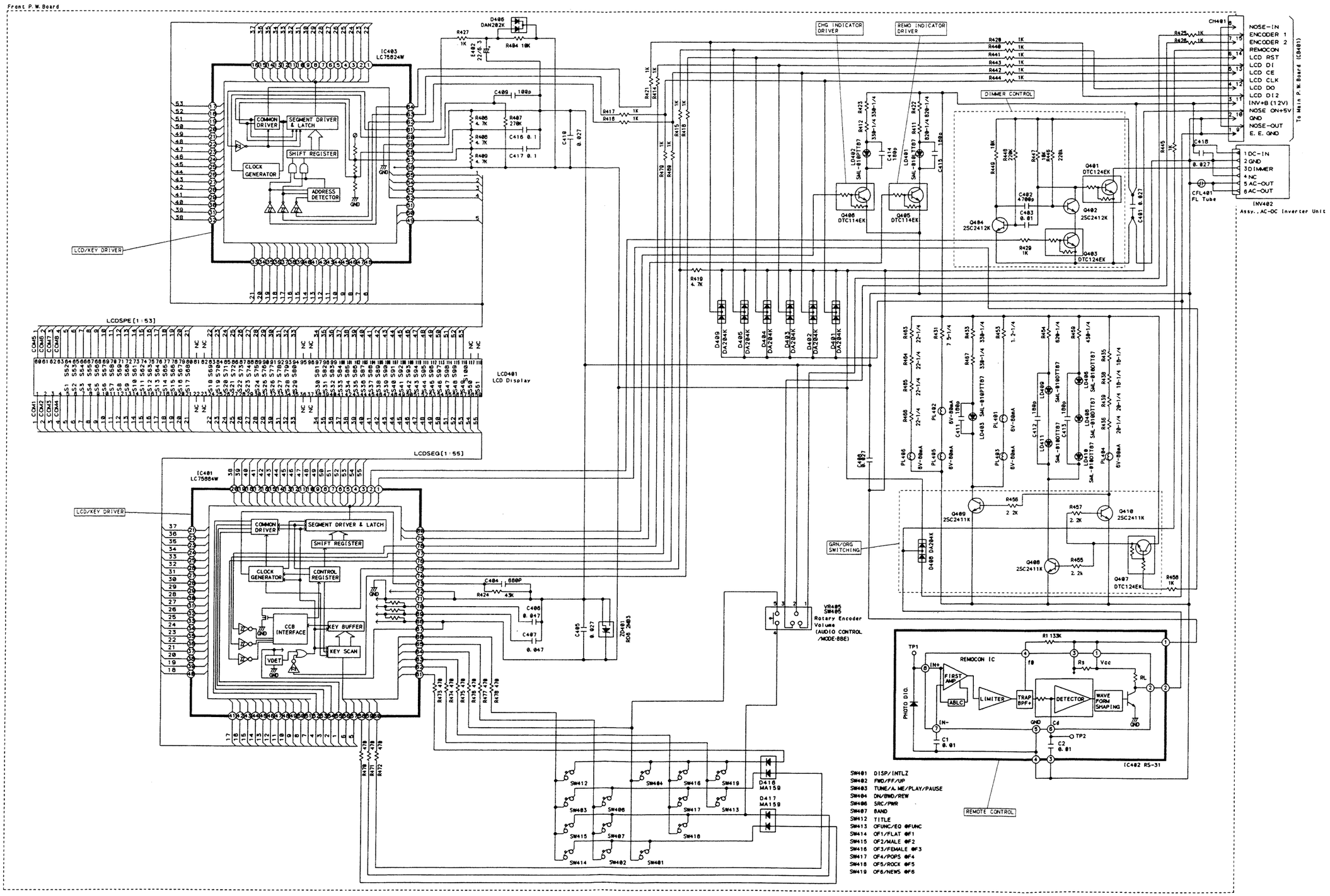
- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

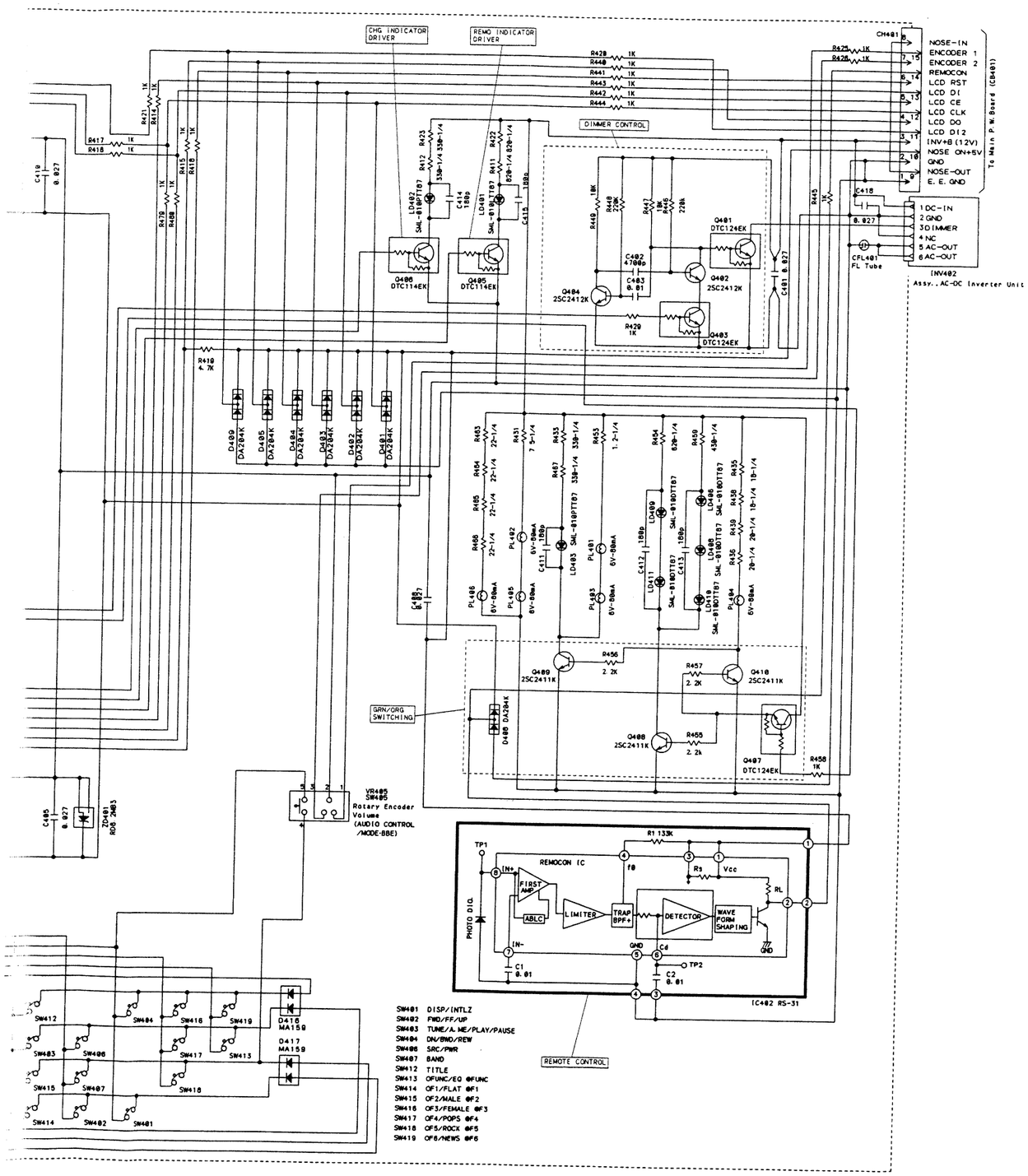
NOTE : ○ : For CTA-1505R Model Only,
● : For CTA-1502R Model Only,
Others : Common.

NOTE:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

CTA-1505R/
CTA-1502R

Schematic Diagram (6/6)





IC401

1, 2	0V	73	3.6V
3~57	2.5V	74	5V
58~60	5V	75	4.8V
61~66	0V	76	2.2V
67, 68	5V	77	3.9V
69	3.3V	78	3V
70	1.7V	79, 80	5V
71, 72	0V		

IC402

1	5V
2	4.7V
3, 4	0V

IC403

1~49	2.5V	59	0V
50, 51	NC	60	1.7V
52~55	2.5V	61	5.1V
56	5V	62	3.9V
57	3.3V	63	2.3V
58	1.7V	64	3.2V

	E	C	B	MODE
Q401	0V	0V	7.7V	
Q402	7.7V	7.7V	8.3V	
Q403	0V	7.7V	0V	
Q404	0V	0V	0.6V	
Q405	0V	0V	5V	
Q406	0V	0V	5V	
Q407	0V / 3.6V	11V / 11V	0V / 5V	GRN / ORG
Q408	0V / 0V	7.2V / 0V	0V / 0.7V	GRN / ORG
Q409	0V / 0V	0V / 11V	0.7V / 0V	GRN / ORG
Q410	0V / 0V	11V / 0V	0V / 0.7V	GRN / ORG

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

NOTE : ○ : For CTA-1505R Model Only,
● : For CTA-1502R Model Only,
Others : Common.

NOTE:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Description of IC Terminal

85312W66 : IC501

No.	Symbol	I/O	Terminal Description
1	MODEL SEL	I	Model Set Up Input Terminal.
2	ENCODER1	I	Encoder 1 Input Terminal.
3	ENCODER2	I	Encoder 2 Input Terminal.
4	AV_{SS}	—	GND Connection Terminal.
5	BBE Low CONT	O	Low Side D / A Signal Output Terminal to BBE IC.
6	BBE Hi CONT	O	High Side D / A Signal Output Terminal to BBE IC.
7	AV_{REF}	—	V_{DD} Connection Terminal.
8	DTS STS	I	Serial Data Signal Input Terminal from DTS μ-COM.
9	DTS CMD	O	Serial Data Signal Output Terminal to DTS μ-COM.
10	DTS CLK	O	Serial Clock Signal Output Terminal to DTS μ-COM.
11	LCD DO	I	Serial Data Signal Input Terminal from LCD Driver (LC75884W).
12	LCD DI	O	Serial Data Signal Output Terminal to LCD Driver (LC75884W).
13	LCD CLK	O	Serial Clock Signal Output Terminal to LCD Driver (LC75884W).
14	LCD CE	O	CE Signal Output Terminal to LCD Driver (LC75884W).
15	LCD RST	O	Reset Signal Output Terminal to LCD Driver (LC75884W).
16	E.VOL DATA	I/O	Serial Data Signal Input / Output Terminal to E-VOL (TDA7461D).
17	E.VOL CLK	O	Serial Clock Signal Output Terminal to E-VOL (TDA7461D).
18	○ EQ CE	O	Latch Output Terminal to EQ IC (LC7527E).
	● NC	—	No Connection Terminal.
19	○ EQ CLK	O	Clock Output Terminal fo EQ IC (LC7527E).
	● NC	—	No Connection Terminal.
20	○ EQ DATA	O	Data Output Terminal to EQ IC (LC7527E).
	● NC	—	No Connection Terminal.
21	SW DATA	O	Serial Data Signal Output Terminal to Sub-W E-VOL (TEA6324T).
22	SW CLK	O	Serial Clock Signal Output Terminal to Sub-W E-VOL (TEA6324T).
23	NC	—	No Connection Terminal.
24	LCD DI2	O	Serial Data Signal Output Terminal to LCD Driver (LC75824W).
25 26	NC	—	No Connection Terminal.
27	○ 50W CONT	O	DC / DC Power IC Control Signal Output Terminal for 50W.
	● NC	—	No Connection Terminal.
28	○ NC	—	No Connection Terminal.
	● NFP1	O	Fader Output Control Terminal at NFP.
29	○ NC	—	No Connection Terminal.
	● NFP2	O	Fader Output Control Terminal at NFP.
30 ≀ 32	NC	—	No Connection Terminal.
33	GND	—	GND Connection Terminal.

No.	Symbol	I/O	Terminal Description
34 ~ 42	NC	—	No Connection Terminal.
43	MUTE	O	Audio Mute Signal Output Terminal. (H : Mute ON)
44	3834 SHIFT	O	Output Selection Control Terminal to SPEANA IC (BA3834F).
45	DTS MUTE	I	Mute Signal Input Terminal from DTS μ-COM.
46	BUZZER	O	Guide Tone Buzzer Signal Output Terminal.
47	3834 SEL	O	Output Selection Control Terminal to SPEANA IC (BA3834F).
48	3834 C		
49	3834 B		
50	3834 A		
51	DTS STBY	O	Stand-by ON / OFF Signal Output Terminal to DTS μ-COM. (H : STBY ON)
52, 53	NC	—	No Connection Terminal.
54	NOSE PWR	O	Power Control Signal Output Terminal for LCD Driver.
55	PWR ON	O	Power Control Signal Output Terminal for Audio and Key Lighting.
56	PWR IC	O	Power IC Stand-by Control Signal Output Terminal.
57	REMOTE ON	O	Remote-ON Signal Output Terminal for Outer AMP.
58	$\overline{\text{IN DIMMER}}$	I	Dimmer Control Input Terminal. (L : Dimmer ON)
59	IN INT	I	IN-Interrupt Input Terminal.
60	$\overline{\text{RESET}}$	I	System Reset Signal Input Terminal.
61	REMOCON	I	Remote Control Data Signal Input Terminal.
62	BAT DET	I	Battery Detection Signal Input Terminal.
63	ACC DET	I	ACC Detection Signal Input Terminal.
64	BUS-IN	I	Ai-NET BUS Data Signal Input Terminal.
65	NC	—	GND Connection Terminal.
66	BUS-OUT	O	Ai-NET BUS Data Signal Output Terminal.
67	NC	—	GND Connection Terminal.
68	V_{DD}	—	V_{DD} Connection Terminal.
69	X2	—	System Clock OSC Circuit Output Terminal.
70	X1	—	System Clock OSC Circuit Input Terminal.
71	GND	—	GND Connection Terminal.
72, 73	NC	—	No Connection Terminal.
74	AV_{DD}	—	Analog Power Input Terminal of A / D and D / A Converter. (V_{DD} Connection)
75	AV_{REF}	—	V_{DD} Connection Terminal.
76	AUDIO LVL	I	Data Input Terminal from SPEANA IC (BA3834F).
77, 78	NC	—	GND Connection Terminal.
79	○ T-SENS	I	Temperature Sensor Signal Input Terminal.
	● NC	—	GND Connection Terminal.
80	NOSE ON	I	NOSE ON Detection Terminal.

15161Y02: IC502

No.	Symbol	I/O	Terminal Description
1	V_{CC}	—	+5V Connection Terminal.
2	NC	—	No Connection Terminal.
3	X0A	—	GND Connection Terminal.
4	MOD0		
5	MOD1		
6	X0	O	Crystal Connection Terminal. (8MHz)
7	X1	I	
8	V_{SS}	—	GND Connection Terminal.
9	$\overline{\text{RESET}}$	I	Reset Signal Input Terminal. (RESET : L)
10 ~ 22	NC	—	No Connection Terminal.
23	$\overline{\text{AM ST}}$	—	AM ST Signal Input Terminal. (Connection Pull-Down)
24 ~ 33	NC	—	No Connection Terminal.
34	$\overline{\text{A-MUTE}}$	O	Tuner Mute Signal Output Terminal. (MUTE ON : L)
35 ~ 38	GND	—	GND Connection Terminal.
39 ~ 44	NC	—	No Connection Terminal.
45	R_XD	I	RDS Monitor Input Terminal. (Pull-Up Connection)
46	T_XD	O	RDS Monitor Output Terminal.
47 ~ 49	NC	—	No Connection Terminal.
50	V_{CC}	—	V_{CC} Connection Terminal.
51 ~ 52	NC	—	No Connection Terminal.
53	TUNER CLK	I	Clock Signal Input Terminal from Main µ-COM.
54	TUNER SI	I	Serial Input Terminal from Main µ-COM.
55	TUNER SO	O	Serial Output Terminal to Main µ-COM.
56	RDS SDA	I/O	RDS I2C Data Input / Output Terminal.
57	RDS CLK	O	RDS I2C Clock Output Terminal.
58	GND	—	GND Connection Terminal.
59	V_{SS}	—	
60 ~ 62	GND	—	

No.	Symbol	I/O	Terminal Description
63	E2P SDA	I/O	E2P-ROM Data Input / Output Terminal.
64	E2P CLK	O	E2P-ROM Clock Output Terminal.
65	NC	—	No Connection Terminal.
66			
67	$\overline{\text{SEEK Req.}}$	O	Seek Speed Control Terminal. (Tuner / / During SEEK : L)
68	GND	—	GND Connection Terminal.
69	$\overline{\text{AF HOLD}}$	O	AF Hold Output Terminal. (Tuner Set Up Hold : L)
70	NC	—	No Connection Terminal.
71	IF MUTE	O	IF Mute Control Terminal. (Pull-Up Connection)
72	FM / $\overline{\text{AM}}$	O	FM / AM Switching Terminal. (FM : H)
73	PLL CLK	O	PLL Clock Output Terminal.
74	PLL DATA	I/O	PLL Data Input / Output Terminal. (Pull-Up Connection)
75	PLL CE	O	PLL CE Output Terminal.
76	SEEK Req.	O	Seek Speed Control Terminal. (Tuner / During SEEK : H)
77	RDS RESET	O	Power ON Reset Terminal of RDS Decoder (SAA6588T).
78	SD	I	SD Input Terminal. (Tuner / Station ON : H)
79	$\overline{\text{PSWN}}$	I	Audio Signal Level Detection Terminal from RDS Decoder (SAA6588T). (No Station : L)
80	Auto Adj.	I	Auto Adjustment Terminal. (Auto Adjustment Start : L)
81	NC	—	No Connection Terminal.
82	LO / $\overline{\text{DX}}$	O	Local Seek / DX Seek Switching Terminal. (Tuner / Local Seek : H)
83	NC	—	No Connection Terminal.
84	AV_{SS}	—	GND Connection Terminal.
85	S / M	I	Field Strength Input Terminal. (A / D, Tuner)
86	M / P	I	Multi Path Detection Input Terminal. (A / D, SAA6588T)
87	GND	—	GND Connection Terminal.
≀			
92			
93	AV_{CC}	—	V_{CC} Connection Terminal.
94	AVR		
95	NC	—	No Connection Terminal.
96			
97	TUNER STBY	I	Stand-by Input Terminal from Main μ-COM.
98	NC	—	No Connection Terminal.
99	DAVN	I	RDS Data Available Input Terminal. (SAA6588T)
100	NC	—	No Connection Terminal.

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF=microfarads,pF=picofarads

Abbreviations

RES.= Resistor	CAP.= Capacitor
C.F.= Carbon Film	ELY.= Electrolytic
M.F.= Metal Film	CER.= Ceramic
M.O.= Metal Oxide Film	MYL.= Mylar
M.P.= Metal Plate	TAN.= Tantalum
TR. = Transistor	POLY.= Polystyrol
TRANS.= Transformer	PP. = Polypropylene
CP. = Chip	PLT.= Polyethylene
	PF. = Polyester Film

	Symbol No.	Part No.	Description
	Main P.W.Board		
	IC's		
	IC001	51T15731W10	TC7S66F
	IC002	51E23843S01	NJM2903M
	IC051	51T75197W05	AN77L05M
	IC052	51T15132Y01	SAA6588T
	IC107	51T90149F03	M5218AFP
	IC108	51T95048W01	BA3834F
	IC201	51T15404Y01	TDA7461D
	IC202	51E23842S01	NJM2904M
	IC220	51T90149F03	M5218AFP
	IC301	51T15021Y01	TDA7386
○	IC302	51T15426Y01	STK740-221
	IC311	51T90149F03	M5218AFP
	IC315	51T90149F03	M5218AFP
	IC321	51T90149F03	M5218AFP
	IC501	51T85312W66	85312W66
	IC502	51T15161Y02	15161Y02
	IC503	51T95563W01	S-80744HL
	IC504	51T15343Y01	ST24C04
	IC611	51T95014F13	S-8052HNM-CR
	IC821	51T45035W02	M5237ML
	IC851	51E23843S01	NJM2903M
	Transistors		
	Q002	48E10426S01	CP., DTC124EK
	Q004	48E10426S01	CP., DTC124EK
	Q008	48E23601S01	CP., DTC114TK
	Q010	48E26560S01	CP., FMC3
	Q051	48E10426S01	CP., DTC124EK
	Q101	48E10426S01	CP., DTC124EK
	Q200	48E27613S01	CP., DTC124TK
	Q211	48E10426S01	CP., DTC124EK
	Q220	48E10426S01	CP., DTC124EK
○	Q301	48E10426S01	CP., DTC124EK
○	Q302	48E10426S01	CP., DTC124EK
	Q501	48T92368F04	CP., 2SD1760
	Q502	48E26560S01	CP., FMC3
	Q503	48E22093S01	CP., DTC114EK
	Q504	48E22093S01	CP., DTC114EK
	Q505	48E22900S01	CP., 2SA1037K
	Q506	48E22093S01	CP., DTC114EK
	Q511	48E23601S01	CP., DTC114TK
	Q512	48E22092S01	CP., DTA124EK
	Q513	48E11274S01	CP., FMC2
	Q601	48E10426S01	CP., DTC124EK
	Q801	48E09399S01	2SB1243
	Q802	48E22095S01	CP., DTC143XK
	Q806	48T69176F02	2SC3421
	Q821	48E23541S01	2SB1238
	Q822	48E23541S01	2SB1238
	Q823	48E10426S01	CP., DTC124EK
	Q824	48T56030F04	2SB941
	Q825	48T93828F01	2SD1994A
	Q831	48T69176F02	2SC3421
	Q832	48T69176F02	2SC3421
	Q842	48E23890S01	CP., DTA143EK
	Q843	48E10426S01	CP., DTC124EK
	Q851	48T52437F01	CP., 2SB709A
	Q852	48E22092S01	CP., DTA124EK
	Q853	48T52438F01	CP., 2SD601A
	Q872	48E22900S01	CP., 2SA1037K
	Q873	48E09399S01	2SB1243
	Q874	48E22093S01	CP., DTC114EK
	Q876	48E10426S01	CP., DTC124EK
	Q891	48E11274S01	CP., FMC2
	Q893	48E10426S01	CP., DTC124EK
	Diodes / Surge Protector		
	D002	48T15437Y01	CP., HSM123
	D301	48T15512W01	CP., DSM10
	D302	48T15512W01	CP., DSM10
	D303	48T15512W01	CP., DSM10
	D304	48T15512W01	CP., DSM10
	D305	48T15512W01	CP., DSM10
	D306	48T15512W01	CP., DSM10
	D307	48T15512W01	CP., DSM10
	D308	48T15512W01	CP., DSM10
	D501	48T75404W01	CP., 1SS353

NOTE : ○ : For CTA-1505R Model Only, Others : Common.

Symbol No.	Part No.	Description
	D502	48E10945S01 CP., DAN202K
	D511	48E10945S01 CP., DAN202K
	D611	48E10945S01 CP., DAN202K
○	D802	48T15601Y01 DSA6A4
●	D802	48T68580F03 DSA3A4
	D803	48T85270W01 MPG06G
	D842	48E10945S01 CP., DAN202K
	D851	48E10945S01 CP., DAN202K
	D852	48E23841S01 CP., DAP202K
	D853	48E10945S01 CP., DAN202K
	D871	48T85270W01 MPG06G
	D872	48T85357W01 CP., 1PS226
	D873	48E22916S01 1SS133
○	ZD301	48T25766W23 Zener, HZS9B3L
	ZD501	48T83128F03 Zener, HZS6A3L
	ZD511	48T83128F18 Zener, HZS7C3L
	ZD806	48T83128F25 Zener, HZS9C1L
	ZD821	48T83128F03 Zener, HZS6A3L
	ZD831	48T83128F40 Zener, HZS12B1L
	DSP001	48T81048F02 Surge Protector, DSP-201M

Buzzer

BZ601	50T85541W01	CD11PA-XZ

Coils

L001	24T65172W17	Inductor, CP. 4.7μH
L002	24E27906S01	Inductor, CP. 15μH
L003	24T15267Y01	ANT1 AM7TL
L301	24T35072W05	BL02RN2
L501	24E22096S01	Inductor, CP. 1μH
L503	24E22096S01	Inductor, CP. 1μH
L801	24T75055W08	Choke
○ L802	25T15632Y01	Choke

Crystals

XL051	91E27606S01	4.332MHz
XL501	91E28512S01	4.1943MHz
XL503	91E28511S01	7.3728MHz

Filters

Z001	91T55615W11	EMI, 306-93Z103N100
Z002	91T55615W11	EMI, 306-93Z103N100
Z007	91T65112W06	EMI, CP. BK2125HM102
Z051	91T65112W06	EMI, CP. BK2125HM102
Z052	91T65112W06	EMI, CP. BK2125HM102
Z053	91T65112W06	EMI, CP. BK2125HM102
Z054	91T65112W06	EMI, CP. BK2125HM102
Z055	91T65112W06	EMI, CP. BK2125HM102
Z058	91T65112W06	EMI, CP. BK2125HM102
Z059	91T65112W06	EMI, CP. BK2125HM102
Z502	91T65112W06	EMI, CP. BK2125HM102
Z803	91T65112W06	EMI, CP. BK2125HM102

Switch

SW611	40T16096W03	Tact, SKHHLW (RESET)

Thermistor

○ TH601	48T35484W11	CP., 100K ohm

Capacitors

C004	08E08577S04	CP., 0.027μF
C006	08E22089S01	CP., 6800pF
C007	08E22899S01	CP., 100pF
C008	08E22081S01	CP., 1000pF
C010	08E26532S01	CP., 0.1μF
C011	08E22899S01	CP., 100pF
C012	08E08577S04	CP., 0.027μF
C013	08E22080S01	CP., 470pF
C015	08E28530S01	TF, 0.27μF
C018	08E22085S01	CP., 0.022μF
C051	08E08577S04	CP., 0.027μF
C052	08E08577S04	CP., 0.027μF
C054	08E22899S01	CP., 100pF
C055	08E22079S01	CP., 330pF
C056	08E08577S04	CP., 0.027μF
C057	08E27612S01	CP., 560pF
C058	08E22931S01	CP., 2200pF
C060	08E22931S01	CP., 2200pF
C061	08E22077S01	CP., 47pF
C062	08E22077S01	CP., 47pF
C063	08E22899S01	CP., 100pF
C064	08E26532S01	CP., 0.1μF
C065	08E08423S04	CP., 27pF
C066	08E08423S04	CP., 27pF
C067	08E22899S01	CP., 100pF

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Symbol No.	Part No.	Description
C142	08E08577S04	CP., 0.027μF
C143	08E08577S04	CP., 0.027μF
C144	08E26532S01	CP., 0.1μF
C145	08E26532S01	CP., 0.1μF
C146	08E26532S01	CP., 0.1μF
C147	08E26532S01	CP., 0.1μF
C199	08E28519S01	CP., 43pF
C203	08E26532S01	CP., 0.1μF
C204	08E26532S01	CP., 0.1μF
C205	08E22081S01	CP., 1000pF
C206	08E20767S01	CP., 3300pF
C207	08E08577S04	CP., 0.027μF
C211	08E22930S01	CP., 1200pF
C212	08E22435S01	TF, 0.1μF
C213	08E22435S01	TF, 0.1μF
C224	08E26532S01	CP., 0.1μF
C301	08E08577S04	CP., 0.027μF
○ C304	08T55390W41	TF, 1μF
○ C305	08T25054Y01	TF, 2.2μF
○ C306	08T55390W41	TF, 1μF
○ C307	08E08577S04	CP., 0.027μF
C311	08E28519S01	CP., 43pF
C312	08E28519S01	CP., 43pF
C313	08E28519S01	CP., 43pF
C314	08E28519S01	CP., 43pF
C315	08E27616S01	TF, 0.33μF
C316	08E27616S01	TF, 0.33μF
C317	08E27616S01	TF, 0.33μF
C318	08E27616S01	TF, 0.33μF
C321	08E23581S01	CP., 33pF
C322	08E23581S01	CP., 33pF
C323	08E23581S01	CP., 33pF
C324	08E23581S01	CP., 33pF
C501	08E08577S04	CP., 0.027μF
C502	08E23579S01	CP., 18pF
C503	08E23579S01	CP., 18pF
C510	08E08577S04	CP., 0.027μF
C511	08E08577S04	CP., 0.027μF
C512	08E23889S01	CP., 15pF
C513	08E23579S01	CP., 18pF
C516	08E08577S02	CP., 1500pF
C517	08E08577S04	CP., 0.027μF
C541	08E08577S04	CP., 0.027μF
C601	08E22081S01	CP., 1000pF
C801	08E28530S01	TF, 0.27μF
○ C802	08E08577S04	CP., 0.027μF
C803	08E28530S01	TF, 0.27μF
C806	08E08577S04	CP., 0.027μF
C811	08E08577S04	CP., 0.027μF

Symbol No.	Part No.	Description
C812	08E08577S04	CP., 0.027μF
C821	08E08577S04	CP., 0.027μF
C822	08E08577S04	CP., 0.027μF
C851	08E22899S01	CP., 100pF
C852	08E08423S04	CP., 27pF
E001	23E20849S01	ELY., 100μF / 10V
E003	23E08383S03	ELY., 220μF / 10V
E005	23E28526S01	ELY., 0.33μF / 50V
E007	23E26237S01	ELY., 1μF / 50V
E008	23E09402S14	ELY., 0.47μF / 50V
E010	23E08383S14	ELY., 33μF / 16V
E051	23E28522S01	ELY., 33μF / 16V
E052	23E28521S01	ELY., 100μF / 10V
E053	23E26238S01	ELY., 2.2μF / 50V
E129	23E23602S01	ELY., 0.47μF / 50V
E130	23E23602S01	ELY., 0.47μF / 50V
E200	23E22994S01	ELY., 10μF / 16V
E203	23E23602S01	ELY., 0.47μF / 50V
E204	23E23260S01	ELY., 22μF / 16V
E205	23E23603S01	ELY., 2.2μF / 50V
E206	23E23603S01	ELY., 2.2μF / 50V
E207	23E23603S01	ELY., 2.2μF / 50V
E208	23E23603S01	ELY., 2.2μF / 50V
E209	23E23603S01	ELY., 2.2μF / 50V
E210	23E23603S01	ELY., 2.2μF / 50V
E211	23E22994S01	ELY., 10μF / 16V
E212	23E22994S01	ELY., 10μF / 16V
E220	23E22993S01	ELY., 1μF / 50V
E221	23E23602S01	ELY., 0.47μF / 50V
E222	23E23261S01	ELY., 100μF / 10V
○ E304	23E26237S01	ELY., 1μF / 50V
E305	23E20208S01	ELY., 47μF / 16V
E306	23T95115W02	ELY., 1μF / 50V
E308	23E22993S01	ELY., 1μF / 50V
○ E309	23T15663Y01	ELY., 4700μF / 16V
○ E310	23T15737Y01	ELY., 4700μF / 25V
E311	23E23602S01	ELY., 0.47μF / 50V
○ E312	23E28523S01	ELY., 3.3μF / 35V
E313	23T35505W06	ELY., 4700μF / 16V
E314	23E23602S01	ELY., 0.47μF / 50V
E315	23E23602S01	ELY., 0.47μF / 50V
E316	23E22992S01	ELY., 0.68μF / 50V
E317	23E22992S01	ELY., 0.68μF / 50V
E318	23E22992S01	ELY., 0.68μF / 50V
E319	23E22992S01	ELY., 0.68μF / 50V
● E320	23T35505W06	ELY., 4700μF / 16V
E321	23E23604S01	ELY., 4.7μF / 35V
E322	23E23604S01	ELY., 4.7μF / 35V
E323	23E23604S01	ELY., 4.7μF / 35V

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Symbol No.	Part No.	Description
E324	23E23604S01	ELY., 4.7μF / 35V
E501	23E28524S01	ELY., 4.7μF / 35V
E502	23E26237S01	ELY., 1μF / 50V
E503	23E26237S01	ELY., 1μF / 50V
E504	23E28523S01	ELY., 3.3μF / 35V
E505	23E28525S01	ELY., 0.22μF / 50V
E511	23E09402S10	ELY., 0.1μF / 50V
E611	23E22099S01	ELY., 10μF / 16V
E801	23E08383S14	ELY., 33μF / 16V
E802	23E08383S14	ELY., 33μF / 16V
E806	23E20849S01	ELY., 100μF / 10V
E807	23E28527S01	ELY., 33μF / 10V
E810	23E08383S05	ELY., 100μF / 16V
E811	23E28522S01	ELY., 33μF / 16V
E812	23E20849S01	ELY., 100μF / 10V
E821	23E28528S01	TAN., 10μF / 25V
E822	23E28527S01	ELY., 33μF / 10V
E823	23E20849S01	ELY., 100μF / 10V
E830	23E28522S01	ELY., 33μF / 16V
E831	23E28522S01	ELY., 33μF / 16V
E832	23E08383S05	ELY., 100μF / 16V
E841	23E09402S02	ELY., 10μF / 16V
E851	23E28526S01	ELY., 0.33μF / 50V
E871	23E22099S01	ELY., 10μF / 16V
E892	23E22099S01	ELY., 10μF / 16V

Resistors		(All resistors are chip 1/10W±5% unless otherwise noted.)
R001	06E22071S01	10 ohm 1/4W
R005	06E20904S01	27K ohm
R006	06E22066S01	220K ohm
R008	06E22065S01	100K ohm
R013	06E22056S01	6.8K ohm
R014	06E22927S01	120K ohm
R015	06E22925S01	4.3K ohm
R016	06E22060S01	22K ohm
R017	06E22060S01	22K ohm
R018	06E22111S01	5.6K ohm
R022	06E20903S01	10K ohm
R023	06E22062S01	47K ohm
R024	06E22062S01	47K ohm
R026	06E22059S01	18K ohm
R027	06E22060S01	22K ohm
R028	06E22069S01	2.2M ohm
R031	06E20903S01	10K ohm
R032	06E22060S01	22K ohm
R033	06E22129S01	24K ohm
R034	06E22060S01	22K ohm
R035	06E23596S01	8.2 ohm 1/4W
R036	06E23596S01	8.2 ohm 1/4W
R037	06E23596S01	8.2 ohm 1/4W
R038	06E23596S01	8.2 ohm 1/4W
R040	06E22045S01	560 ohm
R043	06E22066S01	220K ohm
R044	06E22048S01	1K ohm
R051	06E22048S01	1K ohm
R053	06E22067S01	470K ohm
R056	06E22048S01	1K ohm
R057	06E22040S01	10 ohm
R058	06E22051S01	2.2K ohm
R059	06E22048S01	1K ohm
R061	06E24357S01	270 ohm
R062	06E24357S01	270 ohm
R121	06E22048S01	1K ohm
R122	06E22544S01	750 ohm
R123	06E23743S01	240K ohm
R124	06E28515S01	270K ohm
R125	06E28514S01	160K ohm
R126	06E22064S01	68K ohm
R129	06E27832S01	9.1K ohm 1/8W
R130	06E22035S01	18K ohm 1/8W
R200	06E22055S01	4.7K ohm
R201	06E22048S01	1K ohm
R202	06E22048S01	1K ohm
R203	06E22048S01	1K ohm
R204	06E22063S01	56K ohm
R205	06E22063S01	56K ohm
R206	06E22065S01	100K ohm
R207	06E22065S01	100K ohm
R208	06E22060S01	22K ohm
R209	06E28532S01	750 ohm 1/16W
R211	06E28532S01	750 ohm 1/16W
R212	06E22057S01	8.2K ohm
R213	06E20850S01	39K ohm
R214	06E22544S01	750 ohm
R224	06E20850S01	39K ohm
R225	06E23734S01	750 ohm 1/8W
R226	06E23734S01	750 ohm 1/8W
R227	06E23734S01	750 ohm 1/8W
R228	06E23734S01	750 ohm 1/8W
R301	06E20903S01	10K ohm
○ R302	06E22038S01	470K ohm 1/8W
○ R303	06E23693S01	15K ohm
R304	06E23743S01	240K ohm
R305	06E23743S01	240K ohm
R306	06E23743S01	240K ohm
R307	06E23743S01	240K ohm

NOTE : ○ : For CTA-1505R Model Only, Others : Common.

Symbol No.	Part No.	Description
○ R308	06E22921S01	47K ohm 1/8W
○ R309	06E24363S01	4.7K ohm 1/4W
R311	06E26014S01	10K ohm 1/8W
R312	06E26014S01	10K ohm 1/8W
R313	06E22035S01	18K ohm 1/8W
R314	06E22035S01	18K ohm 1/8W
R315	06E26014S01	10K ohm 1/8W
R316	06E26014S01	10K ohm 1/8W
R317	06E22035S01	18K ohm 1/8W
R318	06E22035S01	18K ohm 1/8W
R321	06E23888S01	22K ohm
R322	06E23888S01	22K ohm
R323	06E28531S01	27K ohm
R324	06E28531S01	27K ohm
R325	06E28531S01	27K ohm
R326	06E28531S01	27K ohm
R327	06E23888S01	22K ohm
R328	06E23888S01	22K ohm
R329	06E20904S01	27K ohm
R330	06E20904S01	27K ohm
R335	06E22028S01	220 ohm 1/8W
R336	06E22028S01	220 ohm 1/8W
R337	06E22028S01	220 ohm 1/8W
R338	06E22028S01	220 ohm 1/8W
R340	06E20904S01	27K ohm
R341	06E20904S01	27K ohm
R342	06E20904S01	27K ohm
R343	06E20904S01	27K ohm
R399	06E28532S01	750 ohm 1/16W
R500	06E22060S01	22K ohm
R501	06E28518S01	4.3K ohm 1/4W
R502	06E28533S01	1K ohm 1/16W
R503	06E28533S01	1K ohm 1/16W
R504	06E28534S01	10K ohm 1/16W
R505	06E22060S01	22K ohm
R506	06E22062S01	47K ohm
○ R507	06E22060S01	22K ohm
● R507	06E22056S01	6.8K ohm
● R508	06E28555S01	15K ohm 1/16W
R509	06E28533S01	1K ohm 1/16W
R510	06E22048S01	1K ohm
R511	06E22033S01	4.7K ohm 1/8W
R512	06E22033S01	4.7K ohm 1/8W
R513	06E22060S01	22K ohm
R514	06E22060S01	22K ohm
R515	06E28537S01	100K ohm 1/16W
R516	06E28533S01	1K ohm 1/16W
R517	06E22048S01	1K ohm
○ R518	06E28533S01	1K ohm 1/16W

Symbol No.	Part No.	Description
○ R519	06E22048S01	1K ohm
R520	06E28533S01	1K ohm 1/16W
R521	06E28533S01	1K ohm 1/16W
R522	06E28536S01	82K ohm 1/16W
R523	06E28536S01	82K ohm 1/16W
R524	06E28534S01	10K ohm 1/16W
R525	06E20903S01	10K ohm
R526	06E20903S01	10K ohm
R527	06E28534S01	10K ohm 1/16W
R528	06E22060S01	22K ohm
R529	06E22055S01	4.7K ohm
R530	06E22048S01	1K ohm
R531	06E22048S01	1K ohm
R532	06E22048S01	1K ohm
R533	06E22048S01	1K ohm
R534	06E22048S01	1K ohm
R535	06E22048S01	1K ohm
R537	06E22048S01	1K ohm
R538	06E22048S01	1K ohm
R539	06E20752S01	220 ohm 1/4W
R540	06E28535S01	22K ohm 1/16W
R541	06E20903S01	10K ohm
R543	06E22060S01	22K ohm
R544	06E22060S01	22K ohm
R545	06E20903S01	10K ohm
R546	06E22051S01	2.2K ohm
R547	06E22053S01	3.3K ohm
R548	06E22041S01	100 ohm
R549	06E22048S01	1K ohm
R550	06E22048S01	1K ohm
R551	06E20903S01	10K ohm
R552	06E20903S01	10K ohm
R553	06E22060S01	22K ohm
R554	06E22060S01	22K ohm
R555	06E22060S01	22K ohm
R556	06E28533S01	1K ohm 1/16W
R557	06E22067S01	470K ohm
R558	06E28533S01	1K ohm 1/16W
R559	06E28533S01	1K ohm 1/16W
R560	06E22062S01	47K ohm
R561	06E28533S01	1K ohm 1/16W
R562	06E22048S01	1K ohm
R564	06E28533S01	1K ohm 1/16W
R565	06E22048S01	1K ohm
R566	06E22048S01	1K ohm
R567	06E22048S01	1K ohm
R568	06E22048S01	1K ohm
R569	06E22048S01	1K ohm
● R570	06E22048S01	1K ohm

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

	Symbol No.	Part No.	Description
●	R571	06E22048S01	1K ohm
	R572	06E22505S01	470 ohm
○	R573	06E28533S01	1K ohm 1/16W
○	R574	06E28533S01	1K ohm 1/16W
○	R575	06E28533S01	1K ohm 1/16W
	R576	06E22058S01	12K ohm
	R577	06E28533S01	1K ohm 1/16W
	R578	06E22048S01	1K ohm
	R579	06E22048S01	1K ohm
	R580	06E22048S01	1K ohm
	R581	06E22048S01	1K ohm
	R582	06E22048S01	1K ohm
	R583	06E22048S01	1K ohm
	R584	06E22048S01	1K ohm
	R585	06E22048S01	1K ohm
	R586	06E22048S01	1K ohm
	R587	06E20903S01	10K ohm
	R588	06E28533S01	1K ohm 1/16W
	R589	06E28533S01	1K ohm 1/16W
	R590	06E22048S01	1K ohm
	R591	06E22048S01	1K ohm
	R592	06E22048S01	1K ohm
○	R593	06E22048S01	1K ohm
	R594	06E28533S01	1K ohm 1/16W
	R595	06E28533S01	1K ohm 1/16W
	R596	06E22048S01	1K ohm
	R597	06E22048S01	1K ohm
	R598	06E28533S01	1K ohm 1/16W
	R599	06E28533S01	1K ohm 1/16W
	R601	06E22074S01	1K ohm 1/4W
	R602	06E20903S01	10K ohm
	R604	06E22048S01	1K ohm
	R605	06E22048S01	1K ohm
	R606	06E28533S01	1K ohm 1/16W
	R607	06E22048S01	1K ohm
	R608	06E22048S01	1K ohm
	R609	06E22048S01	1K ohm
○	R610	06E22051S01	2.2K ohm
	R611	06E22060S01	22K ohm
	R612	06E22055S01	4.7K ohm
	R613	06E22052S01	2.7K ohm
	R801	06E23597S01	1.8K ohm 1/4W
	R802	06E23597S01	1.8K ohm 1/4W
	R803	06E23597S01	1.8K ohm 1/4W
	R804	06E23597S01	1.8K ohm 1/4W
	R805	06E26239S01	10K ohm 1/4W
	R806	06E23859S01	390 ohm 1/4W
	R808	06E20903S01	10K ohm
	R821	06E22053S01	3.3K ohm

Symbol No.	Part No.	Description
R822	06E22074S01	1K ohm 1/4W
R823	06E20903S01	10K ohm
R824	06E23597S01	1.8K ohm 1/4W
R825	06E28517S01	24K ohm
R827	06E28516S01	4.3K ohm
R828	06E20752S01	220 ohm 1/4W
R829	06E28518S01	4.3K ohm 1/4W
R831	06E23859S01	390 ohm 1/4W
R832	06E23258S01	2.2 ohm 1/4W
R833	06E23258S01	2.2 ohm 1/4W
R835	06E23258S01	2.2 ohm 1/4W
R836	06E23258S01	2.2 ohm 1/4W
R842	06E22062S01	47K ohm
R843	06E26239S01	10K ohm 1/4W
R844	06E20903S01	10K ohm
R845	06E23837S01	270 ohm 1/4W
R846	06E23837S01	270 ohm 1/4W
R851	06E20903S01	10K ohm
R852	06E22055S01	4.7K ohm
R853	06E22049S01	1.2K ohm
R854	06E22071S01	10 ohm 1/4W
R855	06E20903S01	10K ohm
R856	06E23836S01	39 ohm 1/4W
R857	06E23836S01	39 ohm 1/4W
R858	06E22051S01	2.2K ohm
R859	06E21164S01	1.5K ohm
R860	06E22056S01	6.8K ohm
R861	06E22056S01	6.8K ohm
R862	06E23836S01	39 ohm 1/4W
R863	06E23836S01	39 ohm 1/4W
R864	06E21164S01	1.5K ohm
R865	06E22051S01	2.2K ohm
R866	06E20903S01	10K ohm
R867	06E20903S01	10K ohm
R871	06E23596S01	8.2 ohm 1/4W
R872	06E23596S01	8.2 ohm 1/4W
R873	06E23596S01	8.2 ohm 1/4W
R874	06E26014S01	10K ohm 1/8W
R875	06E23597S01	1.8K ohm 1/4W
R876	06E23597S01	1.8K ohm 1/4W
R877	06E20903S01	10K ohm
R881	06E23596S01	8.2 ohm 1/4W
R882	06E26239S01	10K ohm 1/4W
R883	06E22076S01	2.2K ohm 1/4W
R884	06E20903S01	10K ohm
R886	06E22055S01	4.7K ohm
R891	06E20903S01	10K ohm
R892	06E20903S01	10K ohm
R893	06E22042S01	220 ohm

NOTE : ○: For CTA-1505R Model Only, ●: For CTA-1502R Model Only, Others : Common.

	Symbol No.	Part No.	Description
	R894	06E22507S01	15K ohm
	VR201	18T55283W22	Variable, CP. 330K ohm

Audio P.W.Board

IC's

○	IC101	51T90149F03	M5218AFP
○	IC102	51T95042W01	LC7527E
	IC103	51T90149F03	M5218AFP
○	IC104	51T90149F03	M5218AFP
	IC105	51T95043W01	BA3884F
○	IC106	51T15168Y01	TEA6324T
●	IC212	51T40941U03	MC14066BFL1
○	IC241	51T90149F03	M5218AFP
	IC261	51T90149F03	M5218AFP
	IC262	51T90149F03	M5218AFP

Transistors

●	Q210	48E23846S01	CP., FMG1
○	Q271	48T63788F04	CP., 2SD1328T
○	Q272	48T63788F04	CP., 2SD1328T
	Q281	48T63788F04	CP., 2SD1328T
	Q282	48T63788F04	CP., 2SD1328T
	Q291	48T63788F04	CP., 2SD1328T
	Q292	48T63788F04	CP., 2SD1328T

Diodes

	D215	48T75404W01	CP., 1SS353
	D216	48T75404W01	CP., 1SS353
	D217	48T75404W01	CP., 1SS353
	D218	48T75404W01	CP., 1SS353
○	D219	48T75404W01	CP., 1SS353
○	D220	48T75404W01	CP., 1SS353

Capacitors

○	C101	08E22899S01	CP., 100pF
	C102	08E22083S01	CP., 0.01μF
	C103	08E20768S01	CP., 0.047μF
	C104	08E20768S01	CP., 0.047μF
	C105	08E22083S01	CP., 0.01μF
○	C106	08E22083S01	CP., 0.01μF
○	C107	08E22899S01	CP., 100pF
○	C109	08E22086S01	CP., 0.033μF
○	C111	08E23894S01	TF, 5600pF
○	C112	08E22525S01	TF, 0.068μF
○	C113	08E22525S01	TF, 0.068μF
○	C114	08E28529S01	TF, 0.027μF
○	C115	08E28529S01	TF, 0.027μF
	C116	08E22080S01	CP., 470pF
	C117	08E22080S01	CP., 470pF
○	C119	08E22086S01	CP., 0.033μF
○	C121	08E23894S01	TF, 5600pF
○	C122	08E21165S01	CP., 8200pF
○	C123	08E22086S01	CP., 0.033μF
○	C124	08E08577S03	CP., 4700pF
○	C125	08E21165S01	CP., 8200pF
	C126	08E26558S01	CP., 0.068μF
	C127	08E26558S01	CP., 0.068μF
○	C128	08E22084S01	CP., 0.015μF
○	C129	08E24320S01	CP., 1800pF
○	C130	08E22086S01	CP., 0.033μF
○	C131	08E08577S03	CP., 4700pF
○	C132	08E23599S01	CP., 5600pF
○	C133	08E22089S01	CP., 6800pF
○	C134	08E24320S01	CP., 1800pF
○	C135	08E22084S01	CP., 0.015μF
○	C136	08E24320S01	CP., 1800pF
○	C137	08E22970S01	CP., 2700pF
○	C138	08E23599S01	CP., 5600pF
○	C139	08E22089S01	CP., 6800pF
○	C140	08E24320S01	CP., 1800pF
○	C141	08E22970S01	CP., 2700pF
○	C241	08E24194S01	CP., 39pF
○	C242	08E24194S01	CP., 39pF
	C251	08E28519S01	CP., 43pF
	C252	08E28519S01	CP., 43pF
	C261	08E28519S01	CP., 43pF
	C262	08E28519S01	CP., 43pF
	E103	23E22992S01	ELY., 0.68μF / 50V
	E104	23E23604S01	ELY., 4.7μF / 35V
	E105	23E23604S01	ELY., 4.7μF / 35V
○	E106	23E23892S01	ELY., 0.33μF / 50V
	E107	23E23604S01	ELY., 4.7μF / 35V
○	E108	23E23602S01	ELY., 0.47μF / 50V
○	E109	23E23604S01	ELY., 4.7μF / 35V
○	E110	23E23602S01	ELY., 0.47μF / 50V
○	E111	23E28520S01	ELY., 0.22μF / 50V
○	E112	23E28520S01	ELY., 0.22μF / 50V
○	E113	23E25420S01	ELY., 3.3μF / 50V

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

	Symbol No.	Part No.	Description
○	E114	23E23891S01	ELY., 0.1μF / 50V
○	E115	23E23891S01	ELY., 0.1μF / 50V
	E116	23E23604S01	ELY., 4.7μF / 35V
	E117	23E23604S01	ELY., 4.7μF / 35V
	E118	23E23604S01	ELY., 4.7μF / 35V
	E119	23E23604S01	ELY., 4.7μF / 35V
	E120	23E23604S01	ELY., 4.7μF / 35V
○	E121	23E23604S01	ELY., 4.7μF / 35V
○	E122	23E22995S01	ELY., 47μF / 16V
○	E123	23E23891S01	ELY., 0.1μF / 50V
	E124	23E23892S01	ELY., 0.33μF / 50V
○	E125	23E22992S01	ELY., 0.68μF / 50V
○	E126	23E22992S01	ELY., 0.68μF / 50V
○	E128	23E23603S01	ELY., 2.2μF / 50V
○	E131	23E23604S01	ELY., 4.7μF / 35V
○	E133	23E23604S01	ELY., 4.7μF / 35V
	E213	23E22992S01	ELY., 0.68μF / 50V
	E214	23E22992S01	ELY., 0.68μF / 50V
	E215	23E22992S01	ELY., 0.68μF / 50V
	E216	23E22992S01	ELY., 0.68μF / 50V
●	E217	23E28520S01	ELY., 0.22μF / 50V
○	E218	23E23260S01	ELY., 22μF / 16V
○	E219	23E23260S01	ELY., 22μF / 16V
○	E241	23E23892S01	ELY., 0.33μF / 50V
○	E242	23E23892S01	ELY., 0.33μF / 50V
	E251	23E23892S01	ELY., 0.33μF / 50V
	E252	23E23892S01	ELY., 0.33μF / 50V
	E261	23E23892S01	ELY., 0.33μF / 50V
	E262	23E23892S01	ELY., 0.33μF / 50V
○	E271	23E22994S01	ELY., 10μF / 16V
○	E272	23E22994S01	ELY., 10μF / 16V
	E281	23E22994S01	ELY., 10μF / 16V
	E282	23E22994S01	ELY., 10μF / 16V
	E291	23E22994S01	ELY., 10μF / 16V
	E292	23E22994S01	ELY., 10μF / 16V

	Resistors		(All resistors are chip 1/10W±5% unless otherwise noted.)
○	R101	06E27736S01	7.5K ohm 1/8W
○	R102	06E27736S01	7.5K ohm 1/8W
○	R106	06E27736S01	7.5K ohm 1/8W
○	R107	06E22921S01	47K ohm 1/8W
○	R108	06E22921S01	47K ohm 1/8W
○	R109	06E27736S01	7.5K ohm 1/8W
○	R112	06E22048S01	1K ohm
○	R115	06E22048S01	1K ohm
○	R117	06E23734S01	750 ohm 1/8W
○	R119	06E23734S01	750 ohm 1/8W

	Symbol No.	Part No.	Description
	R127	06E22544S01	750 ohm
	R128	06E22544S01	750 ohm
○	R215	06E27832S01	9.1K ohm 1/8W
○	R216	06E27832S01	9.1K ohm 1/8W
●	R217	06E22062S01	47K ohm
●	R218	06E22062S01	47K ohm
○	R222	06E22953S01	30K ohm
○	R223	06E22953S01	30K ohm
○	R231	06E20904S01	27K ohm
○	R232	06E20904S01	27K ohm
○	R241	06E23743S01	240K ohm
○	R242	06E23743S01	240K ohm
○	R243	06E27736S01	7.5K ohm 1/8W
○	R244	06E27736S01	7.5K ohm 1/8W
○	R245	06E21162S01	5.6K ohm 1/8W
○	R246	06E21162S01	5.6K ohm 1/8W
○	R247	06E23738S01	20K ohm 1/8W
○	R248	06E23738S01	20K ohm 1/8W
○	R249	06E22028S01	220 ohm 1/8W
○	R250	06E22028S01	220 ohm 1/8W
	R251	06E23743S01	240K ohm
	R252	06E23743S01	240K ohm
	R253	06E26014S01	10K ohm 1/8W
	R254	06E26014S01	10K ohm 1/8W
	R257	06E22035S01	18K ohm 1/8W
	R258	06E22035S01	18K ohm 1/8W
	R259	06E22028S01	220 ohm 1/8W
	R260	06E22028S01	220 ohm 1/8W
	R261	06E23743S01	240K ohm
	R262	06E23743S01	240K ohm
	R263	06E26014S01	10K ohm 1/8W
	R264	06E26014S01	10K ohm 1/8W
	R267	06E22035S01	18K ohm 1/8W
	R268	06E22035S01	18K ohm 1/8W
	R269	06E22028S01	220 ohm 1/8W
	R270	06E22028S01	220 ohm 1/8W
○	R271	06E22062S01	47K ohm
○	R272	06E22062S01	47K ohm
○	R273	06E22115S01	100 ohm 1/4W
○	R274	06E22115S01	100 ohm 1/4W
	R281	06E27832S01	9.1K ohm 1/8W
	R282	06E27832S01	9.1K ohm 1/8W
	R283	06E22062S01	47K ohm
	R284	06E22062S01	47K ohm
	R285	06E22115S01	100 ohm 1/4W
	R286	06E22115S01	100 ohm 1/4W
	R291	06E27832S01	9.1K ohm 1/8W
	R292	06E27832S01	9.1K ohm 1/8W
	R293	06E22062S01	47K ohm

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Symbol No.	Part No.	Description
R294	06E22062S01	47K ohm
R295	06E22115S01	100 ohm 1/4W
R296	06E22115S01	100 ohm 1/4W
R297	06E23688S01	240K ohm 1/8W
Front P.W.Board		
IC's		
IC401	51T15488Y01	LC75884W
IC402	51T55639W01	RS-31
IC403	51T15122Y01	LC75824W
Transistors		
Q401	48E10426S01	CP., DTC124EK
Q402	48E22902S01	CP., 2SC2412K
Q403	48E10426S01	CP., DTC124EK
Q404	48E22902S01	CP., 2SC2412K
Q405	48E22093S01	CP., DTC114EK
Q406	48E22093S01	CP., DTC114EK
Q407	48E10426S01	CP., DTC124EK
Q408	48T63461F01	CP., 2SC2411K
Q409	48T63461F01	CP., 2SC2411K
Q410	48T63461F01	CP., 2SC2411K
Diodes		
D401	48E10946S01	CP., DA204K
D402	48E10946S01	CP., DA204K
D403	48E10946S01	CP., DA204K
D404	48E10946S01	CP., DA204K
D405	48E10946S01	CP., DA204K
D406	48E10945S01	CP., DAN202K
D408	48E10946S01	CP., DA204K
D409	48E10946S01	CP., DA204K
D416	48T81063F01	CP., MA159
D417	48T81063F01	CP., MA159
ZD401	48T62934F26	Zener, CP. RD6.2MB3
Inverter		
INV402	01T95281W03	Assy., AC-DC Inverter Unit

Symbol No.	Part No.	Description
Lamps		
○ PL401	65T75233W03	CP., 6V-80mA
● PL401	65T75233W01	CP., 6V-80mA
○ PL402	65T85350W03	6V-80mA
● PL402	65T85350W01	6V-80mA
○ PL403	65T75233W03	CP., 6V-80mA
● PL403	65T75233W01	CP., 6V-80mA
PL404	65T75233W02	CP., 6V-80mA
○ PL405	65T85350W03	6V-80mA
● PL405	65T85350W01	6V-80mA
○ PL406	65T75233W03	CP., 6V-80mA
● PL406	65T75233W01	CP., 6V-80mA
LED's		
LD401	48T65477W02	CP., SML-010LTT87 (RED)
LD402	48T65477W03	CP., SML-010PTT87 (GRN)
LD403	48T65477W03	CP., SML-010PTT87 (GRN)
LD406	48T65477W05	CP., SML-010DTT87 (ORG)
LD408	48T65477W05	CP., SML-010DTT87 (ORG)
LD409	48T65477W05	CP., SML-010DTT87 (ORG)
LD410	48T65477W05	CP., SML-010DTT87 (ORG)
LD411	48T65477W05	CP., SML-010DTT87 (ORG)
Switches		
SW401	40T55656W06	Tact, CP. SKQMAJ (DISP/INTLZ)
SW402	40T55656W06	Tact, CP. SKQMAJ (FWD/FF/UP)
SW403	40T55656W06	Tact, CP. SKQMAJ (TUNE/A.ME/PLAY/PAUSE)
SW404	40T55656W06	Tact, CP. SKQMAJ (DN/BWD/REW)
SW406	40T55656W06	Tact, CP. SKQMAJ (SRC/PWR)
SW407	40T55656W06	Tact, CP. SKQMAJ (BAND)
SW412	40T55656W06	Tact, CP. SKQMAJ (TITLE)
○ SW413	40T55656W06	Tact, CP. SKQMAJ (FUNC/EQ)
● SW413	40T55656W06	Tact, CP. SKQMAJ (FUNC)
○ SW414	40T55656W06	Tact, CP. SKQMAJ (F1/FLAT)
● SW414	40T55656W06	Tact, CP. SKQMAJ (F1)
○ SW415	40T55656W06	Tact, CP. SKQMAJ (F2/MALE)
● SW415	40T55656W06	Tact, CP. SKQMAJ (F2)
○ SW416	40T55656W06	Tact, CP. SKQMAJ (F3/FEMALE)
● SW416	40T55656W06	Tact, CP. SKQMAJ (F3)
○ SW417	40T55656W06	Tact, CP. SKQMAJ (F4/POPS)
● SW417	40T55656W06	Tact, CP. SKQMAJ (F4)
○ SW418	40T55656W06	Tact, CP. SKQMAJ (F5/ROCK)
● SW418	40T55656W06	Tact, CP. SKQMAJ (F5)
○ SW419	40T55656W06	Tact, CP. SKQMAJ (F6/NEWS)

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Symbol No.	Part No.	Description
● SW419	40T55656W06	Tact, CP. SKQMAJ (F6)
Capacitors		
C401	08E08577S04	CP., 0.027μF
C402	08E08577S03	CP., 4700pF
C403	08E22083S01	CP., 0.01μF
C404	08E08423S06	CP., 680pF
C405	08E28552S01	CP., 0.027μF
C406	08E20768S01	CP., 0.047μF
C407	08E20768S01	CP., 0.047μF
C408	08E08577S04	CP., 0.027μF
C409	08E22899S01	CP., 100pF
C410	08E28552S01	CP., 0.027μF
C411	08E22510S01	CP., 180pF
C412	08E22510S01	CP., 180pF
C413	08E22510S01	CP., 180pF
C414	08E22510S01	CP., 180pF
C415	08E22510S01	CP., 180pF
C416	08E26532S01	CP., 0.1μF
C417	08E26532S01	CP., 0.1μF
C418	08E08577S04	CP., 0.027μF
E402	23S15525Y04	CP. ELY., 22μF / 6.3V
Resistors		(All resistors are chip 1/10W±5% unless otherwise noted.)
R404	06E28534S01	10K ohm 1/16W
R406	06E28549S01	4.7K ohm 1/16W
R407	06E28551S01	270K ohm 1/16W
R408	06E28549S01	4.7K ohm 1/16W
R409	06E28549S01	4.7K ohm 1/16W
R411	06E28547S01	820 ohm 1/4W
R412	06E22073S01	330 ohm 1/4W
R414	06E28533S01	1K ohm 1/16W
R415	06E28533S01	1K ohm 1/16W
R416	06E28533S01	1K ohm 1/16W
R417	06E28533S01	1K ohm 1/16W
R418	06E28533S01	1K ohm 1/16W
R419	06E22055S01	4.7K ohm
R420	06E22048S01	1K ohm
R421	06E28533S01	1K ohm 1/16W
R422	06E28547S01	820 ohm 1/4W
R423	06E22073S01	330 ohm 1/4W
R424	06E28550S01	43K ohm 1/16W
R425	06E22048S01	1K ohm
R426	06E22048S01	1K ohm
R427	06E28533S01	1K ohm 1/16W

Symbol No.	Part No.	Description
R429	06E22048S01	1K ohm
R431	06E24392S01	7.5 ohm 1/4W
R433	06E22073S01	330 ohm 1/4W
R435	06E28546S01	18 ohm 1/4W
R436	06E23900S01	20 ohm 1/4W
R438	06E28546S01	18 ohm 1/4W
R439	06E23900S01	20 ohm 1/4W
R440	06E22048S01	1K ohm
R441	06E22048S01	1K ohm
R442	06E22048S01	1K ohm
R443	06E22048S01	1K ohm
R444	06E22048S01	1K ohm
R445	06E22048S01	1K ohm
R446	06E22066S01	220K ohm
R447	06E20903S01	10K ohm
R448	06E22066S01	220K ohm
R449	06E20903S01	10K ohm
R453	06E28545S01	1.2 ohm 1/4W
R454	06E23838S01	620 ohm 1/4W
R455	06E22051S01	2.2K ohm
R456	06E22051S01	2.2K ohm
R457	06E22051S01	2.2K ohm
R458	06E22048S01	1K ohm
R459	06E27845S01	430 ohm 1/4W
R463	06E22113S01	22 ohm 1/4W
R464	06E22113S01	22 ohm 1/4W
R465	06E22113S01	22 ohm 1/4W
R466	06E22113S01	22 ohm 1/4W
R467	06E22073S01	330 ohm 1/4W
R470	06E28548S01	470 ohm 1/16W
R471	06E28548S01	470 ohm 1/16W
R472	06E28548S01	470 ohm 1/16W
R473	06E28548S01	470 ohm 1/16W
R474	06E28548S01	470 ohm 1/16W
R475	06E28548S01	470 ohm 1/16W
R476	06E28548S01	470 ohm 1/16W
R477	06E28548S01	470 ohm 1/16W
R478	06E28548S01	470 ohm 1/16W
R479	06E28533S01	1K ohm 1/16W
R480	06E28533S01	1K ohm 1/16W

DC-DC Converter P.W.Board

IC's

IC701	51E28509S01	NJM78L09A
IC702	51E28510S01	NJM79L09A

NOTE : ●: For CTA-1502R Model Only, Others : Common.

Symbol No.	Part No.	Description
Transistors		
Q701	48T69176F02	2SC3421
Q702	48E22789S01	2SD1857
Q703	48E22789S01	2SD1857
Diodes		
D701	48T85269W01	SB040
D702	48T85269W01	SB040
D703	48T85269W01	SB040
D704	48T85269W01	SB040
ZD701	48T83128F26	Zener, HZS9C2L
Coil		
L701	24T95399W21	Inductor, 470μH
Transformer		
T701	25T95401W01	LC-10-DB
Capacitors		
C706	08E28529S01	TF, 0.027μF
E701	23E28507S01	ELY., 100μF / 10V
E702	23E28507S01	ELY., 100μF / 10V
E703	23E08384S05	ELY., 100μF / 16V
E704	23E08384S05	ELY., 100μF / 16V
E705	23E08384S07	ELY., 33μF / 16V
E706	23E28508S01	ELY., 33μF / 10V
E707	23E28507S01	ELY., 100μF / 10V
Miscellaneous		
CB401	09T15299Y15	15P Connector
CFL401	65T95443W07	FL Tube
CH401	09T15298Y15	15P Connector
DIN803	09T55071W11	Ai-NET Connector
ET001	01E28060S01	Assy., Antenna Receptacle
○ ET201	01E28544S01	Assy., RCA Connector (FRONT OUT/ REAR OUT/SUB-W/Remote Control Interface)
● ET201	01E28556S01	Assy., RCA Connector (F-OUT/NFP & REAR OUT)
● ET501	01E28613S01	Assy., Remote Control Interface Connector
ET801	09E23591S01	Speaker Output & Power Supply Connector
○ ET802	01T15762Y01	Assy., Kit Wire (BATT-25A/GND)
○ LCD401	65T15513Y04	LCD Display
● LCD401	65T15513Y02	LCD Display
○ TM801	29T94619F01	Terminal (M3)
○ TM802	29T94619F01	Terminal (M3)
VR405 SW405	18E26570S01	Rotary Encoder Volume (AUDIO CONTROL/MODE • BBE)

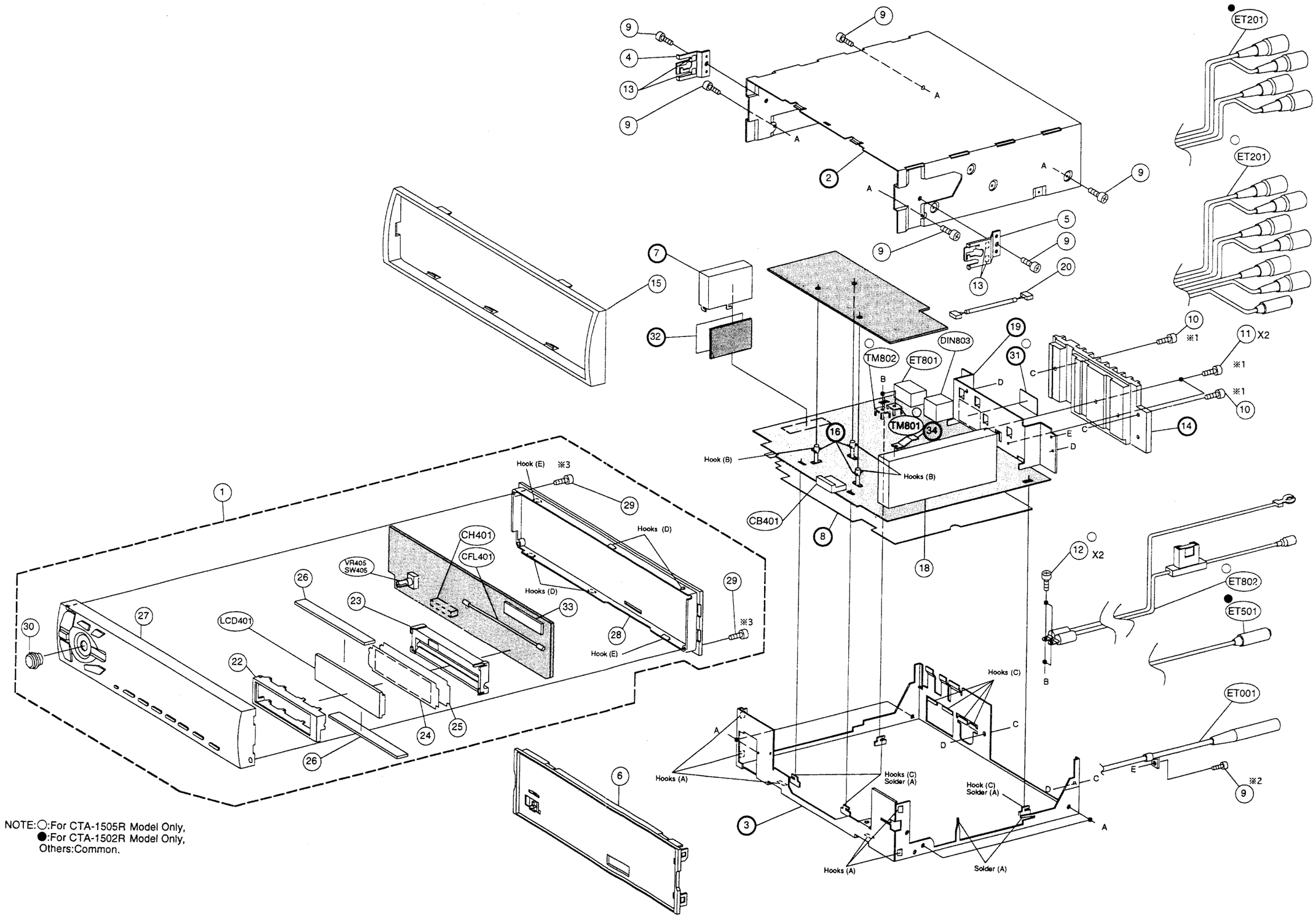
NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

MEMO

Exploded View (Cabinet)

CTA-1505R/ CTA-1502R	CTA-1505R/ CTA-1502R

NOTE : The screws marked "※1～3" are disassembly parts.



NOTE:○:For CTA-1505R Model Only,
●:For CTA-1502R Model Only,
Others:Common.

Cabinet Assembly Parts List

NOTE:Parts without part number are not supplied.

Symbol No.	Index	Part No.	Description
○ 1	3-B	01E28046S01	Assy., Nose Unit
● 1	3-B	01E28059S01	Assy., Nose Unit
4	1-D	07D91595W01	Assy., Bracket Side (L)
5	2-G	07D91595W02	Assy., Bracket Side (R)
6	5-D	13C11371Y01	Assy., Front Escutcheon
9		03E09416S05	Screw, MCH-TPT (M2.6X6)
10		03E22117S01	Screw, MCH-TPT (M2.6X8)
11	3-G	03E28539S01	Screw, MCH-TPT (M2.6X18)
○ 12	4-G	03E28540S01	Screw, MCH-TPT (M3X5)
13		26E28612S01	Sheet, Bracket Side
15		33C10618Y01	Face, Plate
18	4-F	77C10163Y01	FM/MW/LW Tuner Unit, MB4R603S (FE001)
20	3-G	01E28513S01	Assy., Shield Wire (3P-3P)
22	4-B	15B91067W01	Cover, LCD
23	4-C	15C91068W01	Case, LCD
24	4-C	26B91066W03	Reflector, Sheet (A)
25	4-C	26B91066W04	Reflector, Sheet (B)
26		75T85248W04	Rubber, Electric
○ 27	4-B	13C11361Y05	Assy., Nosepiece
● 27	4-B	13C11361Y03	Assy., Nosepiece
○ 28	4-D	13D11370Y02	Nose, Bottom
● 28	4-D	13D11370Y01	Nose, Bottom
29		03E22134S01	Screw, TPG2 (M1.7X10)
○ 30	4-A	36B10628Y04	Knob, Rotary (VOLUME)
● 30	4-A	36B10628Y01	Knob, Rotary (VOLUME)
33	4-D	26A20002Y01	Shield, Plate

Symbol No.	Index	Part No.	Description

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

Disassembly Instructions

1. Removal of Nose Unit

(1) Refer to the Owner's Manual (Part No. 68P11199Y25, 26).

2. Removal of Front Escutcheon

(1) After removal of Top Cover, Face Plate and two Bracket Side, remove six Hooks (A). ..... Hooks (A) (5-D, 5-E)

3. Removal of Audio P.W.Board

(1) After removal of Front Escutcheon, remove three Hooks (B). ..... Hooks (B) (3-E, 3-F)

(2) Remove all connectors from Audio P.W.Board.

4. Removal of Main P.W. Board

(1) After removal of Audio P.W.Board, remove four screws No. 10, 11, and remove Heat Sink. ..... Screws No. 10 (※1) (2-G, 3-G)
Screws No. 11 (※1) (3-G)

(2) Remove a screw No. 9. ..... Screw No. 9 (※2) (5-G)

(3) Remove six points of Solder (A) and eight Hooks (C). ..... Solder (A) (5-F)
Hooks (C) (4-F, 5-F)

(4) Main P.W.Board with DC/DC Converter P.W.Board can be removed completely.

5. Removal of Front P.W. Board

(1) After removal of Nose Unit, remove two screws No. 29. ..... Screws No. 29 (※3) (3-D, 4-E)

(2) Remove Knob Rotary No. 30. ..... Knob Rotary No. 30 (4-A)

(3) Remove four Hooks (D), and remove Nosepiece. ..... Hooks (D) (3-D, 4-D)

(4) Remove two Hooks (E), and remove Front P.W.Board. ..... Hooks (E) (3-D, 4-D)

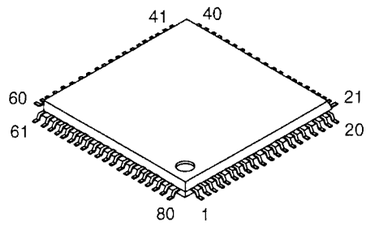
NOTE: For the screws No., Hook and Solder, refer to the Exploded View (Cabinet).

CTA-1505R/ CTA-1502R

Semi-Conductor Lead Identifications

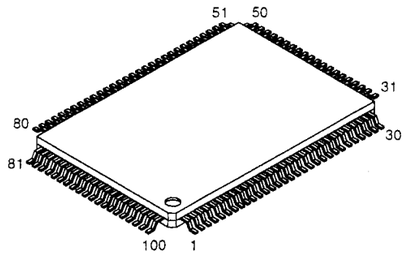
NOTE : For the parts not mentioned, refer to the Schematic Diagram.

85312W66 : IC501



PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	MODEL SEL	I	21	SW DATA	O	41	NC	—	64	BUS-IN	I
2	ENCODER1	I	22	SW CLK	O	42	NC	—	65	NC	—
3	ENCODER2	I	23	NC	—	43	MUTE	O	66	BUS-OUT	O
4	AV_{SS}	—	24	LCD DI2	O	44	3834 SHIFT	O	67	NC	—
5	BBE Low CONT	O	25	NC	—	45	DTS MUTE	I	68	V_{DD}	—
6	BBE Hi CONT	O	26	NC	—	46	BUZZER	O	69	X2	—
7	AV_{REF}	—	27	○ SOW CONT	O	47	3834 SEL	O	70	X1	—
8	DTS STS	I		● NC	—	48	3834 C	O	71	GND	—
9	DTS CMD	O	28	○ NC	—	49	3834 B	O	72	NC	—
10	DTS CLK	O		● NFP1	O	50	3834 A	O	73	NC	—
11	LCD DO	I	29	○ NC	—	51	DTS STBY	O	74	AV_{DD}	—
12	LCD DI	O		● NFP2	O	52	NC	—	75	AV_{REF}	—
13	LCD CLK	O	30	NC	—	53	NC	—	76	AUDIO LVL	I
14	LCD CE	O	31	NC	—	54	NOSE PWR	O	77	NC	—
15	LCD RST	O	32	NC	—	55	PWR ON	O	78	NC	—
16	E.VOL DATA	I/O	33	GND	—	56	PWR IC	O	79	○ T-SENS	I
17	E.VOL CLK	O	34	NC	—	57	REMOTE ON	O		● NC	—
18	○ EQ CE	O	35	NC	—	58	$\overline{IN\ DIMMER}$	I	80	NOSE ON	I
	● NC	—	36	NC	—	59	IN INT	I			
19	○ EQ CLK	O	37	NC	—	60	$\overline{RESET}$	I			
	● NC	—	38	NC	—	61	REMOCON	I			
20	○ EQ DATA	O	39	NC	—	62	BAT DET	I			
	● NC	—	40	NC	—	63	ACC DET	I			

15161Y02 : IC502



PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	V_{CC}	—	26	NC	—	51	NC	—	76	SEEK Req.	O
2	NC	—	27	NC	—	52	NC	—	77	RDS RESET	O
3	X0A	—	28	NC	—	53	TUNER CLK	I	78	SD	I
4	MOD0	—	29	NC	—	54	TUNER SI	I	79	$\overline{PSWN}$	I
5	MOD1	—	30	NC	—	55	TUNER SO	O	80	Auto Adj.	I
6	X0	O	31	NC	—	56	RDS SDA	I/O	81	NC	—
7	X1	I	32	NC	—	57	RDS CLK	O	82	LO / $\overline{DX}$	O
8	V_{SS}	—	33	NC	—	58	GND	—	83	NC	—
9	$\overline{RESET}$	I	34	$\overline{A\text{-}MUTE}$	O	59	V_{SS}	—	84	AV_{SS}	—
10	NC	—	35	GND	—	60	GND	—	85	S / M	I
11	NC	—	36	GND	—	61	GND	—	86	M / P	I
12	NC	—	37	GND	—	62	GND	—	87	GND	—
13	NC	—	38	GND	—	63	E2P SDA	I/O	88	GND	—
14	NC	—	39	NC	—	64	E2P CLK	O	89	GND	—
15	NC	—	40	NC	—	65	NC	—	90	GND	—
16	NC	—	41	NC	—	66	NC	—	91	GND	—
17	NC	—	42	NC	—	67	$\overline{SEEK\ Req.}$	O	92	GND	—
18	NC	—	43	NC	—	68	GND	—	93	AV_{CC}	—
19	NC	—	44	NC	—	69	$\overline{AF\ HOLD}$	O	94	AVR	—
20	NC	—	45	R_XD	I	70	NC	—	95	NC	—
21	NC	—	46	T_XD	O	71	IF MUTE	O	96	NC	—
22	NC	—	47	NC	—	72	FM / $\overline{AM}$	O	97	TUNER STBY	I
23	$\overline{AM\ ST}$	—	48	NC	—	73	PLL CLK	O	98	NC	—
24	NC	—	49	NC	—	74	PLL DATA	I/O	99	DAVN	I
25	NC	—	50	V_{CC}	—	75	PLL CE	O	100	NC	—

NOTE : ○ : For CTA-1505R Model Only, ● : For CTA-1502R Model Only, Others : Common.

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